The New England
Journal of Medicine

VOLUME 210 MAY 3, 1934 NUMBER 18

NEW ENGLAND SURGICAL SOCIETY

ACUTE THYROIDITIS WITH REPORT OF TEN CASES*

BY ROBERT C. COCHRANE, M.D.,† AND STANLEY J. G. NOWAK, M.D.†

GLANDS of internal secretion are peculiarly immune to acute infection; their tendency toward pathologic changes lies rather in the direction of dysfunction and tumor formation. Exceptions to this general rule are the thyroid and testis. Acute inflammation of the thyroid gland is not commonly encountered and by reason of its obscurity is subject to errors of management and treatment. It has been our rare privilege to study ten cases of acute thyroiditis at the Boston City Hospital and to observe personally four of these. This experience has enabled us to formulate a conception of diagnosis and treatment which we wish to present in this communication.

Inflammatory lesions of the thyroid may be classified broadly as acute and chronic. The acute form was subclassified by Mygind[1] in 1894 into simple acute and acute suppurative types, each of which he considered a disease sui generis, a view not readily tenable at the present time. Following this simple, yet adequate, classification further subdivision was suggested with respect to the presence or absence of adenoma; thus acute thyroiditis represented inflammation of a normal gland while strumitis referred to an acute lesion superimposed on an adenomatous growth. It was further thought that acute thyroiditis remained in the state of acute cellulitis whereas acute strumitis proceeded on to suppuration. These distinctions are not supported by the present-day conception of this disease and it appears that Mygind's original classification of the acute form into simple and suppurative groups can hardly be improved upon.

Although attention was directed toward acute inflammation of the thyroid by Carrion, Walter, Conradi and others[2] in the eighteenth century, only scattered case reports and three collective reviews have made their appearance in literature. As early as 1857, however, Bauchet[3] wrote a monograph on the subject with five case reports which remains to the present day a classic for its accuracy and thoroughness of description. Oddly enough this work has not received its proper recognition. In 1878 before the days of bacteriology Kocher considered acute thyroiditis as of infectious metastatic origin, a view which was subsequently confirmed by Tavel in 1892[4]. Three years later appeared Mygind's classification already referred to. In 1896 Ewald[5] dispensed with the rigid conception of simple and suppurative thyroiditis as separate disease entities as suggested by Mygind and supported by DeQuervain. The subject remained dormant until the appearance of the collective reviews of Robertson in 1911[6], of Hagenbuch in 1921[6], and of Burhans in 1928[7].

The incidence of thyroiditis is extremely low, estimated at less than one-half per cent of all observed clinical cases of thyroid disease. During the senior author's experience with five hundred thyroidectomies there occurred seven cases, three of which came to operation.

With the exception of several cases in which the infection was due to direct trauma as reported by Link[8] or extension from a thyroglossal duct as reported by Cleland[9] the lesion is usually secondary to some other focus as originally stated by Kocher. The frequency with which this condition follows upper respiratory infections points to the lymphatics as an important route of infection. The blood stream also carries organisms to the gland as in cases of puerperal septicemia, typhoid fever, pneumonia, etc. Finally, changes in physiological states such as puberty, menstruation and pregnancy are also well-recognized predisposing factors.

Females are more susceptible to the disease than males in a ratio of two to one. The average age of onset is from twenty to forty, the extreme limits being eighteen months and seventy-seven years.

The history of previous goitre is a rather frequent finding as is shown in thirty-two of the sixty-seven cases of Burhans[7] and thirty-three of the ninety-six cases of Robertson[6]. On the other hand only five of the forty-three cases of Hagenbuch[6] showed previous goitre. This factor must be a variable one depending, for example, upon the presence of goitre in certain regions. Hyperthyroidism, on the other hand, is rarely complicated by acute thyroiditis. Bothe[10] has, however, reported a case in which the metabolic rate registered plus 42. The disease leads frequently to various degrees of myxedema as re-

*Read before the New England Surgical Society at Boston, September 30, 1933.

†Cochrane, Robert C. — Surgeon-in-Chief, Second Surgical Service, Boston City Hospital. Nowak, Stanley J. G. — Assistant Director of the Surgical Research Laboratory, Boston City Hospital. For records and addresses of authors see "This Week's Issue," page 971.

ported by Burhans[7] and Hallberg[11]. An extreme grade of myxedema has been reported by Wileox[12] in the case of a girl who developed suppurative thyroiditis from local sepsis after a transcervical removal of a foreign body from the esophagus.

A long list of organisms has been found to cause this lesion. The most common of these are streptococcus hemolyticus, staphylococcus aureus, pneumococcus, typhoid, paratyphoid a, paratyphoid b and colon bacillus. More rarely one encounters malarial parasites and trypanosomes. Thyroiditis has been known to occur after smallpox, measles, rheumatic fever, influenza, diphtheria, and cerebrospinal meningitis.

In 1899 Roger and Garnier[13] studied the effect of bacteria injected into the common carotid artery which was ligated above the origin of the thyroid arteries. They found the gland little affected after injection of staphylococci and bacilli typhosus. On the other hand the injection of streptococci, diphtheria toxin, tetanus toxin, pilocarpine nitrate and iodides produces definite pathological lesions of acute thyroiditis.

These same workers made the earliest contributions to the pathology of the disease. Their studies were based on postmortem examinations of thirty-three cases following various acute infections such as scarlet fever, measles, diphtheria, typhoid, meningitis, smallpox and streptococcus peritonitis. Microscopically, changes were noted in the acini, in the stroma, and in the blood vessels. The acini were found to be smaller than usual resembling secretions of an infantile thyroid. They were devoid of colloid material which appeared to migrate into the interstitial spaces and lymphatics. The acini showed various degrees of disintegration and their lumina were filled with poorly staining granular cells, the result of earlier desquamation. Throughout they observed a generalized capillary dilation and rare hemorrhages. This description is obviously one of the simple acute type. The suppurative stage is characterized by diffuse polymorphonuclear infiltration, bacterial invasion, and necrosis. For more recent pathological descriptions the publications of Burhans[7] and of Clute and Smith[14] are recommended.

From this local picture it is apparent that the disease process readily spreads to the surrounding tissues involving the pretracheal muscles, the recurrent laryngeal nerve, the thyroid cartilage, the trachea, the esophagus (with possible perforation of these structures) and spreads under the deep cervical fascia either upward toward the mandible or downward into the anterior mediastinum.

The relationship of acute to chronic thyroiditis is not a clear one. Most writers consider each process a distinct entity. This may well be the general rule but our experience with one case of recurrent acute attacks with evidence of acute necrosis superimposed on a chronic lesion demonstrates a possible relationship between the acute and chronic processes. Similar findings have been noted by Deaver and Burden[15] and by Vianny[16].

The characteristic symptoms of acute thyroiditis are pain over the gland, dysphagia, hoarseness, dyspnea and chills. Pain may be the initial symptom of the disease. Usually characterized by soreness it may become lancinating and radiate to the ear or the shoulders, undoubtedly a sympathetic phenomenon. It may dominate the picture and direct the attention to the ear.

The presence of a tumor may be the initial symptom in some cases.

Dysphagia is a very prominent complaint. It may vary from slight discomfort to inability to swallow anything but liquids. This symptom is due to the presence of the tumor and is frequently accompanied by a constant desire to swallow because of the feeling of pressure on the esophagus.

Hoarseness is also common and is due probably to an extension of the inflammatory process to the vocal cords or the recurrent nerve. At times the voice is reduced to a whisper. This symptom may be so dominant as to lead to a search for an intralaryngeal growth.

The inflammatory tumor and surrounding reaction inevitably constrict the trachea to produce respiratory obstruction of varying degrees culminating in some cases in asphyxia. This phase of the disease is extremely important in the consideration of the choice of anesthetic.

Hyperthyroidism has been known to occur with the characteristic eye signs, elevated metabolism, nervousness, and so forth, but it is a rare manifestation.

Toxemia, however, may be overwhelming. It is, of course, dependent upon factors chief of which are the nature of the involving organism, the amount of the gland involved, and the resistance of the patient.

The characteristic signs are swelling over one or both lobes of the thyroid with marked local tenderness. Edema is commonly present. Redness, however, is a late sign even in the presence of suppuration. The swelling may preserve the contour of the lobe or gland or it may be diffuse in appearance causing obliteration of the suprasternal notch.

The attitude of the patient is the second most characteristic sign. The patient usually sits up in bed, with head bent forward, with a distressed stare, dyspneic, swallowing frequently, possibly coughing, and unable to raise his voice above a whisper. Bauchet's[3] original description brings out most of the important physical features of the disease, some of which have been accredited to various subsequent writers. Let us quote from his historical monograph. "The patient gives to the head a particular position.

He flexes it gently forward, chin inclined toward the sternum; he relaxes in a word the subhyoid muscles. . . . The tumefaction obliterates the hollow formed by the junction of the two sternomastoid muscles. This tumor follows the movements, upward and downward, of the larynx. . . . On requesting the patient to drink one observes what goes on in the tumor."

He further describes the course of the disease so accurately that the following extract is also presented. "Thyroiditis lasts in general one or two weeks, the tumor appears on the second or third day, enlarges from the third up to the fifth or sixth day, then if suppuration does not follow, it diminishes from this time and disappears from the fifteenth to the twentieth day. During the early stages the symptoms become aggravated; they remain stationary for a day or two, then disappear more or less quickly, according to the patient and the treatment which was put to use. That is the progress most normal of thyroiditis. If the inflamed thyroid has a tendency to terminate with suppuration the symptoms become aggravated; the fever does not fall around the sixth day; on the contrary, chills manifest themselves, the skin is tense and red, the tumor becomes more painful, softens, and becomes fluctuant. The fluctuation is generally manifested from the tenth to the twentieth day. . . . In case the abscess spreads outward the infection will be more serious and almost always fatal; the pus will fuse with the cellular tissue, follow the trachea, the vessels of the neck, reach as far as the anterior mediastinum or the posterior mediastinum and one understands at once the danger of such complications."

The temperature in simple thyroiditis may be only slightly elevated while suppuration of the gland is associated with a temperature of 102°F. sometimes reaching 104°. Occasionally chills and sharp elevation of temperature are observed resembling that seen in malaria. The leukocyte count ranges from 14,000 to 30,000. Positive blood cultures are to be expected in some cases showing, of course, any one of the organisms mentioned.

Of all the conditions for which this disease is mistaken cellulitis of the neck is the most frequent. The latter is extremely rare in the lower half of the neck in the midline. It is found practically always in its greatest intensity in the submaxillary or carotid triangles. It is safe to say that cellulitis confined to the lower half of the front of the neck is secondary to an inflamed thyroid gland, particularly if the gland itself is tender to pressure, if the suprasternal notch is obliterated, and if dysphagia or aphonia are present. Ludwig's angina will show definite ulceration in the pharynx along with submaxillary or submental involvement. Other infectious lesions to be differentiated from thyroiditis are diphtheritic laryngitis and perichondritis of the thyroid cartilage, both of which are rare and which will be recognized by laryngoscopy. Chronic infections of the thyroid of either tuberculous or luetic origin will simulate subacute involvement of the thyroid. The ultimate differentiation will probably rest with the pathological sections. Both adenoma and carcinoma may present a strong resemblance to acute thyroiditis and vice versa. Spontaneous hemorrhage in an adenoma, although rare, may be confused with acute thyroiditis because of its sudden onset, acute pain, swelling and localized tenderness. This condition will not, however, show a constitutional reaction. Simple colloid goitre when characterized by rapid growth will often resemble simple acute thyroiditis because of the swelling and tenderness but again will not be associated with general reaction. Finally, tumors or diverticulae of the esophagus, and tumors of the superior mediastinum need only be mentioned as differential problems.

The prognosis is excellent in simple acute thyroiditis. Resolution will occur under palliative treatment in ten to fourteen days. Robertson[5] in his series of ninety-six cases reported two deaths in fifty-six cases of simple thyroiditis giving a mortality of 3.5 per cent. In forty suppurative cases he reported nine deaths, giving a mortality of 22.5 per cent. These figures bear out our impression that suppurative disease of the thyroid is a serious condition in contrast to the relatively excellent prognosis of simple acute thyroiditis.

Recurrences in both simple and suppurative types have been reported and were observed in one of our cases.

The complications of the disease are perforation into the larynx or trachea, mediastinitis, pyemia, septic joints, osteomyelitis, myxedema or more rarely thyrotoxicosis.

Treatment of the disease falls into two categories: non-operative and operative. Simple acute thyroiditis will yield to supportive treatment consisting of local cold or heat, rest, elevation of the head, and sedatives. The presence or suspicion of a suppurative process calls for early operative incision and drainage. In rare cases of miliary abscesses, partial thyroidectomy has been recommended by Clute and Smith[14]. In the presence of suppurative adenomata, Vianny[16] has advised partial strumectomy ("Strumectomie a chaud primitive") which he has done in three cases. In some cases operative interference will be aimed at relief of the general toxemia resulting from the local lesion, in others it will be directed at relief of pressure symptoms reaching proportions of an emergency. The choice of anesthetic is important, particularly where tracheal obstruction is present. The use of a general anesthetic may cause a dangerous asphyxial spasm of the larynx and upper

trachea, particularly in an individual with a short neck. Where obstruction is a definite possibility we feel that incision and drainage should be carried out under local anesthesia with adequate preoperative medication.

The actual operative procedure consists of the classical collar line incision and exposure of the gland. The abscess which usually points to the surface of the gland or surrounds it is then opened by blunt scissor dissection and drained by rubber dams. The wound is then loosely sutured about the drains. Partial thyroidectomy may be advisable as already stated.

DISCUSSION

It is no exaggeration to say that acute thyroiditis as an entity is unknown to the average internist and surgeon. It frequently masquerades under the name of cellulitis of neck in the suppurative stage or painful goitre in the simple acute stage. We are of the opinion that the disease, although uncommon, is by no means rare and should be considered in all cases of swelling either circumscribed or diffuse in the lower neck associated with inflammatory symptoms and signs.

It follows that the acute surgical aspect in many of these cases has been entirely overlooked either from failure of diagnosis or from inadequate appreciation of the seriousness of the suppurative stage of the disease. Our experience of three deaths in seven suppurative cases shows how grave the disease may be. The common error is that of delayed operation and improper choice of anesthetic. It is, however, highly probable that operative interference in the presence of streptococcus hemolyticus infection before localization of the infection occurs may result in spread of infection into the blood stream. This purely speculative note is mentioned only because surgical experience has repeatedly brought out the danger of too early operative interference in streptococcus infections elsewhere. We reiterate, however, that the prevalent error is that of delayed operation.

The choice of anesthetic has been stressed and the desirability of local anesthesia in most cases is urged. It is absolutely indicated in the presence of obstructive phenomena. The operative technique presents no problems save for the occasional desirability of subtotal resection in the presence of miliary abscesses.

The ten cases reported represent both the typical and atypical aspects of the disease. They illustrate the relatively favorable prognosis of the simple acute form in contrast to the serious prognosis of the suppurative form. They bear out the usefulness of this broad classification not only in the matter of prognosis but also in the choice of therapeutic procedure.

Reports of seven cases of acute suppurative thyroiditis and three cases of simple acute thyroiditis follow.

CASE No. 1. M. M. (Hosp. No. 332144) a twenty-two year old single female was admitted to the B. C. H. on Jan. 31, 1916 with a complaint of sore throat and soreness in the neck and both ears of one and one-half weeks' duration. These symptoms developed three to four days after the onset of an attack of influenza. Since the onset of these symptoms the patient had noticed general malaise and a slight fever. There was no exophthalmos, tachycardia, or nervousness. The patient had had no previous swelling of the thyroid. The family and past history revealed no significant facts. Physical examination showed a well-developed and well-nourished young female adult. Eyes, ears, nose, and throat showed no abnormality. The neck revealed a marked enlargement in the region of the thyroid, particularly noticeable over the isthmus. This enlargement was moderately tender and felt rather soft. There was no redness of the overlying skin. The heart showed no enlargement or murmurs. The apex rate was 84 and was regular in rhythm. The lungs were clear. The abdomen showed an enlarged uterus of six months' pregnancy. The extremities showed no tumor or other abnormalities. The temperature on admission was 100°F., pulse 90-100, respirations 25. The admission white blood count was 10,000, the urine and the Wassermann reaction were negative. On February 2 (two days after admission) an incision and drainage of the thyroid was done under 0.5 per cent procaine by Dr. Lahey. A large abscess was found in the region of the isthmus which yielded thick creamy pus. The postoperative course was uneventful, the temperature reaching normal on the third day. The patient was discharged on the thirteenth day (Feb. 14, 1916).

Diagnosis:—Acute Suppurative Thyroiditis, Pregnancy.

CASE No. 2. K. T. (Hosp. No. 442678, 443170) a twenty-eight year old married woman was admitted to the B. C. H. on Sept. 8, 1922 with a complaint of sore throat and fever. Three weeks ago the patient noticed a sore throat associated with chills and fever which cleared up in two days. She had a recurrence of these symptoms one week later with similar recovery. Several days before admission the patient had a third attack of the same symptoms. These were characterized by pain in the right side of the throat on swallowing and radiation of this pain to the right ear. There were no symptoms of thyroid toxicity during the present illness or in the past history. The marital history showed three normal pregnancies. Physical examination showed no abnormal findings except in the throat. There was a slight erythema of the pharynx, the tonsils were definitely enlarged and slightly reddened. The right ear drum and canal wall were red and there was bulging of the drum. The temperature was 99.0°F., and pulse 95, respiration 25. Paracentesis was performed on September 9 (one day after admission). One week after admission the patient developed a diffuse swelling and redness over the thyroid region with obliteration of the suprasternal notch. There were no signs of thyroid toxicity. A pre-operative B. M. R. was reported as "normal." On September 18 (two days after development of thyroid swelling) incision and drainage was performed under ether by Dr. Loder. A mid-line abscess was found. The patient was discharged nine days later (Sept. 28).

Diagnosis:—Acute Suppurative Thyroiditis, Acute Pharyngitis, Acute Otitis Media (right).

CASE No. 3. P. P. (Hosp. No. 462947) a forty-five year old Greek married female was admitted to the B. C. H. on September 7, 1923 with a complaint

	C. C.	Dur. & Etiol.	Findings	Treatment	Result	Remarks
1. M. M. F. 22. Suppurative.	Soreness of lower neck and throat. Radiation to both ears.	1½ weeks. Influenza.	Median swelling. T.—100; P.—90; W. B. C.—10,000.	I. & D. Local.	Cured. 13 days in Hosp.	6 months pregnant.
2. K. T. F. 28. Suppurative.	Sore throat. Pain over thyroid.	2 days. Pharyngitis and otitis.	Median swelling, tenderness, redness, obliteration of suprasternal notch. T.—99; P.—95.	I. & D. Ether.	Cured. 20 days in Hosp.	Paracentesis 2 days before onset.
3. P. P. F. 45. Suppurative.	Soreness, swelling in neck, chills, constant swallowing, dyspnea.	30 days.	Swelling of right lobe, redness. T.—98-104; P.—95; W. B. C.—6,800-4,400.	Palliative.	Cured. 30 days in Hosp.	No malarial parasites found. B. M. R.—plus 1%.
4. J. H. M. 28. Suppurative.	Painful swelling of neck, dysphagia, dyspnea, loss of weight.	2 weeks. Previous attack 8 weeks before. ? of septic bleb on heel.	Diffuse swelling, redness, tenderness, obliteration of suprasternal notch, anterior neck rigidity. W. B. C.—26,600.	Tracheotomy. Gas.	Dead.	Asphyxiated under gas. Staphylococcus aureus. Blood culture first admission.
5. A. M. M. 32. Suppurative.	Swelling in neck, orthopnea, nervousness, dysphonia.	1 week. Influenza.	Diffuse swelling, redness, tenderness, obliteration of suprasternal notch, anterior neck rigidity. T.—102; P.—120; W. B. C.—20,750.	I. & D. Local.	Dead. 10 hours.	Terminal thyroid storm. Staphylococcus aureus.
6. T. O. M. 39. Suppurative.	Swelling in neck, dysphagia, aphonia, dyspnea, radiation to both ears.	2 weeks. Coryza.	Swelling on right, tenderness, edema, obliteration of suprasternal notch, anterior neck rigidity. T.—102; P.—120; W. B. C.—30,250.	I. & D. Local.	Cured. 23 days in Hosp.	B. M. R.—10% 6 weeks postoperative. Streptococcus hemolyticus.
7. E. M. M. 61. Suppurative.	Lower neck pain radiating to shoulder, dyspnea.	2 days.	Swelling on right, tenderness, edema, redness, cellulitis of chest wall. T.—102; P.—105; W. B. C.—16,200.	Palliative.	Dead. 4 days in Hosp.	Too sick to operate. Streptococcus hemolyticus.
8. M. R. F. 36. Acute.	Swelling left side of neck, paroxysms of coughing, dyspnea.	Several days. 2 attacks.	Diffuse swelling on left, local tenderness, obliteration of suprasternal notch. T.—98; P.—87; W. B. C.—16,200.	Palliative.	Cured. 7 days in Hosp.	
9. J. C. M. 23. Acute.	Soreness and swelling of neck.	1 week.	Swelling on left, local tenderness. T.—101; P.—114.	Palliative.	Cured. 9 days in Hosp.	
10. C. W. F. 55. Acute.	Pain left side of neck during course of pneumonia.	7 days. Pneumonia.	Swelling on left, edema, redness, tenderness. T.—101.5; P.—80; W. B. C.—11,600.	Palliative.	Dead.	Death due to pneumonia.

of soreness in the neck following the appearance of a swelling in the lower left region of the neck. The swelling had gradually increased in size and along with chills, fever, nervousness, irritability, dyspnea and insomnia. The family history was unimportant, the past history revealed epigastric distress of several years' duration and some gynecological disorder leading to a dilatation and curettage one year ago. The physical examination showed an enlargement of the right lobe of the thyroid the size of an egg. The swelling was hard and irregular extending under the clavicle. The isthmus was palpable, the left lobe was slightly enlarged. Redness was present over the mass. No thrill, bruit, or exophthalmos was observed. The patient was continually swallowing because of the pressure of the mass. The remainder of the physical examination showed no abnormality except for a presystolic murmur heard over the precordium, most marked over the apex. There was no cardiac enlargement. The temperature was 98.0°F., pulse 75, respirations 22, white blood count 6,800, blood pressure 132 systolic, 80 diastolic. The urine showed a slight trace of albumin in three out of nine examinations. The Wassermann reaction was negative. The swelling appeared to quiet down with conservative treatment. On the fifteenth day of admission the temperature rose to 104°F. with increase of local symptoms. The white blood count was 4,400. A blood smear revealed the following: 68.3 per cent polymorphonuclears, 10 per cent large lymphocytes, 15 per cent small lymphocytes, 0.3 per cent basophiles, 0.3 per cent myelocytes, 2.3 per cent meta-myelocytes, 2.8 per cent large mononuclears, 1 per cent eosinophiles. The red blood count was 4,112,000; hemoglobin (Tallqvist) 70 per cent. No malarial parasites were seen. Chills and fever persisted for one week and on the twenty-third day the condition began to improve. At this time the B. M. R. was plus 1 per cent. On the twenty-seventh day the patient was put on a malarial régime of quinine with improvement in the local and general condition. The patient was discharged on the thirtieth day after admission (October 6, 1923).

Diagnosis:—Acute Suppurative Thyroiditis.

CASE No. 4. J. H. (Hosp. No. 574716) a twenty-eight year old male stenographer was first admitted to the B. C. H. on December 4, 1928 with a complaint of swelling in the lower neck and dysphagia of four days' duration. During the past three months he had noticed a loss of forty pounds in weight. There were no other signs of thyroid toxicity. Physical examination showed a well-developed adult with moderate dyspnea and unproductive cough. There was a brawny edema over the lower neck, obliterating the suprasternal notch. The throat showed slight redness. On admission the white blood count was 26,600 and the blood culture showed a staphylococcus aureus growth in seventy-two hours. On admission x-ray examination of the chest showed no evidence of pathology. Two weeks after admission the patient developed clinical and x-ray signs of pneumococcemia in the left base. Feeding by nasal tube was found necessary because of the difficulty in swallowing. Both neck and chest conditions cleared up, however, and the patient was discharged to the medical wards eight weeks after admission (Oct. 29).

Diagnosis:—Acute Thyroiditis, Bronchopneumonia (Left).

Two weeks after discharge the patient had a recurrence of the neck symptoms characterized chiefly by dysphagia. He attempted domestic treatment for two weeks but found it necessary to be readmitted on December 4. On this admission he showed a diffuse swelling of the neck from the hyoid bone to the sternum and laterally to the posterior margins of the sternomastoids. There was redness over the lower central portion of this swelling. Deep fluctuation was obtained over the suprasternal notch. Two days after admission the neck was incised and drained. After a few inspirations of gas-oxygen the patient developed complete tracheal obstruction. An immediate tracheotomy was done by Dr. Nowak, but no respiratory exchange could be obtained.

Postmortem examination showed the thyroid gland involved in an infectious process which extended throughout the gland on both sides as irregular small abscesses. The surrounding soft tissue was edematous and small collections of pus and necrosis were found in the upper and lateral regions. The outer limits of the process indicated by dense fibrous tissue at the level of the angle of the jaw above, and of the mediastinum below. Sanguinopurulent material was found in the bronchi and larger bronchioles. The smaller bronchioles contained dark red blood. Both lower lobes were atelectatic.

Microscopic analysis of the thyroid gland showed histologically both an acute and chronic inflammatory process present. There is a moderate amount of old fibrous scar tissue found which is infiltrated with plasma cells and monocytes. In these areas the colloid had disappeared to a large extent from follicles.

In addition to this the presence of a definitely acute inflammatory process is shown by the presence of an exudate of polymorphonuclear leucocytes, necrosis of follicles and giant-cell formation around bits of free colloid. There are also a few small abscesses to be found. With a Gram stain a few chains of gram-positive cocci and rare gram-positive lancet-shaped diplococci are found in these areas of acute inflammation.

On the periphery of the section are islands of essentially normal thyroid tissue save for slight colloid distention of follicles.

Diagnosis:—Acute and chronic thyroiditis.

CASE No. 5. A. M. (Hosp. No. 578185) a thirty-two year old married male was admitted to the B. C. H. on January 28, 1929 with a complaint of difficulty in breathing and swelling in the neck of one week's duration. Twelve days before admission the patient had a mild attack of grippe. Two days later he developed a sore throat and several days later a swelling over the lower neck region. These symptoms increased gradually along with the further development of nervousness and general irritability. The patient also experienced occasional attacks of palpitation. The family, marital and past history disclosed no important facts. The physical examination showed a well-developed and well-nourished adult male sitting up in bed, dyspneic, and slightly cyanotic. There was a slight exophthalmos, definite lidlag and positive von Graefe's sign. The neck showed a moderate diffuse symmetrical swelling over the lower part of the front of the neck from the hyoid bone down to and obliterating the suprasternal notch. There were redness and edema over this swelling. The consistency was firm, fluctuation was absent. There was moderate generalized tenderness. The heart was normal. The pulse rate was rapid, ranging from 120-140. Examination of the chest showed dullness, increased breath sounds, increased tactile fremitus, and a friction rub over the lower right half posteriorly. There was a slight tremor of both hands. On admission the temperature was 102°F., pulse 120, respirations 27. The white blood count was 20,750. Incision and drainage was done under 1 per cent procaine anesthesia by Dr. R. C. Cochrane. Frank pus was drained from both lobes after division of edematous pretracheal tissues. Culture of the pus showed staphylococcus

aureus. Five hours after operation the pulse rose from 125 to 150, the respirations increased to 35. The clinical picture was that of thyroid storm for which the patient was treated. Death occurred, however, twelve hours after operation.

Diagnosis:—Acute Suppurative Thyroiditis, Pleuritis, Bronchopneumonia (Right).

CASE No. 6. T. O. (Hosp. No. 704522) a single white chauffeur was admitted to the B. C. H. on March 30, 1933 with the complaint of swelling in the right side of the neck of two weeks' duration. This swelling developed during an attack of coryza. One week before admission the patient developed dysphagia which increased up to the point of inability to swallow anything but liquids. On the day of admission swallowing liquids caused severe pain in the thyroid region. Three days before admission the pain radiated from the lower neck to the right ear. The family history was unimportant. The past history revealed diphtheria during childhood, influenza in 1918, acute tonsillitis two years ago and tonsillectomy shortly afterward. Physical examination showed no abnormal eye signs, inability to open the mouth beyond one-half the normal limit and swelling over the lower neck region. The swelling was more marked over the right lobe of the thyroid with slight edema of the skin extending over the median portion of the neck, filling out the suprasternal notch. There was marked tenderness over the right lobe and slight tenderness over the isthmus. The heart, lungs, abdomen and extremities showed no abnormalities. The admission temperature was 102°F., pulse 90-120, respirations 26. The white blood count was 14,500 which rose to 30,250 on the second day. The blood smear showed 98 per cent polymorphonuclears with many young forms, 2 per cent lymphocytes. The Kahn reaction was negative. Incision and drainage was done under local anesthesia by Dr. C. C. Lund. Abscess was found in the right lobe containing thick pus which on culture proved to be streptococcus hemolyticus. The postoperative course was without incident, the temperature reaching normal on the fourth day postoperative. On the twenty-first day postoperative the patient was discharged. One month after discharge the B. M. R. was —10 per cent.

Diagnosis:—Acute Suppurative Thyroiditis.

CASE No. 7. E. M. (Hosp. No. 585066) a sixty-one year old married white janitor was admitted to the B. C. H. on October 15, 1929 with a complaint of dull, steady pain in both sides of the neck of two days' duration. The onset was very sudden and was associated with nausea, vomiting, malaise and dysphagia several hours later. The family, marital and past history was unimportant. There was no history of thyroid disturbance. The physical examination showed a redness and edema over the right side of the neck and upper chest to the fifth rib anteriorly. The swelling in the neck extended beyond the midline and was tender. Both tonsils were enlarged, reddened and covered with a yellowish exudate. The remainder of the examination showed no abnormalties. On admission the temperature was 102°F., pulse 105, respirations 25, blood pressure 122/72. The white blood count was 16,800, the red count 4,200,000. On the third day the blood culture showed no growth. The patient's progress showed a sustained temperature and pulse rising to 120 with painful paroxysms of coughing, and extreme prostration. Death occurred on the fourth day. Autopsy showed swelling and edema of the anterior portion of the neck and thoracic wall. On the right side of the neck above the clavicle there was a swollen indurated mass which on section showed considerable seropurulent fluid. This inflammatory process extended into the anterior mediastinum. Culture of the inflamed area showed streptococcus hemolyticus. The heart showed moderate hypertrophy and coronary sclerosis. The lungs were negative.

Diagnosis:—Acute Suppurative Thyroiditis.

CASE No. 8. M. R. (Hosp. No. 467849) a thirty-six year old married female was admitted to the B. C. H. on Jan. 18, 1924 with a complaint of swelling over the lower neck. The patient had entered with a similar complaint on Dec. 3, 1923 and was discharged four days later. During this admission the patient was seen by Dr. Lahey who advised conservative treatment for acute thyroiditis. During the interval there was an increase in the swelling with paroxysms of coughing, dyspnea in the prone position and nervousness. The family history was unimportant. The marital history revealed seven pregnancies, two of which terminated in miscarriages. The past history disclosed an attack of hoarseness without sore throat one year ago. Physical examination showed no abnormalities except for a swelling, more marked on the left, extending from the hyoid bone to the suprasternal notch. The swelling was slightly tender. There were no thrills or bruit. The admission temperature was 98.0°F., pulse 87, respirations 21, blood pressure 112/70. The white blood count was 16,200 with a differential count of 61 per cent polymorphonuclears, 24 per cent lymphocytes, 10 per cent monocytes, and 5 per cent eosinophiles. The Wassermann reaction was negative. The tenderness and swelling decreased with symptomatic treatment and the patient was discharged on the seventh day. (Jan. 25, 1924.)

Diagnosis:—Acute Thyroiditis.

CASE No. 9. J. C. (Hosp. No. 480604) a twenty-three year old single male was admitted to the B. C. H. on July 5, 1924 with a complaint of tenderness over the left side of the lower neck of one week's duration. The patient had noticed a fullness in the lower neck for the past two years, but the swelling began to increase in size one week ago. The past history revealed an accident resulting in concussion one year ago. Physical examination showed a larger pupil on the left with normal reactions. There was a marked symmetrical swelling on both sides of the neck more marked on the left where it reached the size of a hen's egg. This swelling was acutely tender. The heart and lungs were normal. There was definite tremor of both hands. The admission temperature was 101°F., pulse 114, respirations 24. The patient was seen by Dr. Ullian who confirmed the diagnosis of acute thyroiditis. The patient's condition improved with symptomatic treatment, the temperature reaching normal on the fourth day. The patient was discharged on the ninth day. (July 14, 1924.)

Diagnosis:—Acute Thyroiditis.

CASE No. 10. C. W. (Hosp. No. 700027) a fifty-five year old white, married, housewife was admitted on February 15, 1933 with a complaint of pain in the left chest of four days' duration. Five weeks before admission the patient developed an acute upper respiratory infection with an unproductive cough. Four days before admission she was seized with severe left pleuritic pain for which she entered the hospital. The family history was unimportant; the marital history disclosed four normal pregnancies. The past history revealed diphtheria at the age of seventeen. Catamenia stopped three years ago. There has been a loss of thirty pounds in the past four years. Physical examination showed signs of fluid with a suggestive underlying atelectasis, because of the displacement of the heart to the right.

X-ray examination showed a resolving pneumonia on the right. The admission temperature was 102°F., pulse 85, respirations 22, blood pressure 110/70. The white blood count was 14,700 with a differential count of 84 per cent polymorphonuclears, 14 per cent lymphocytes, 2 per cent monocytes. The Kahn reaction was negative. On the third day thoracentesis of the right side posteriorly yielded 70 cc. of yellowish fluid which was sterile on culture.

The signs of pneumonia persisted with a temperature ranging up to 100 for nine days. The patient's condition seemed to improve during the next five days although the clinical and x-ray signs persisted. Sputum examinations showed no tubercle bacilli. Two blood cultures showed no growth. On the nineteenth day the patient developed swelling and redness over the left side of the lower neck. At this time the temperature was 101.5°, pulse 80, respirations 22. The white count was 11,600. The neck revealed a swelling and redness over the lower neck obliterating the suprasternal notch. There was tenderness over the left lobe of the thyroid reaching up to the level of the hyoid bone. The condition was treated symptomatically. On the following day the temperature rose to 103°F., but the redness and tenderness began to disappear. The patient's general condition continued downhill with persistence of the pneumonic signs in the right lower chest and terminated in death five days after the onset of neck symptoms. (Mar. 11, 1933.)

Diagnosis:—Acute Thyroiditis, Resolving Pneumonia (Right), ? Pulmonary Tuberculosis, ? Carcinoma of the Lung.

REFERENCES

1 Mygind, H.: Thyroiditis acuta simplex. Hosp. Tid., Kjbenh. 2:1181 (4R.) 1894.
2 Quoted by Crotti, A.: Thyroid and Thymus. Philadelphia, Lea and Febiger, 1918.
3 Bauchet, L. J.: De la thyroïdite (goitre aigu) et du goitre enflammé (goitre chronique enflammé). Gaz. hebd. de med. 4:19, 52, 75, 92, 1857.
4 Tavel, E.: Ueber die Aetiologie der Strumitis. Basel, C. Sallman, 1892.
5 Robertson, W. B.: Acute inflammation of the thyroid gland. Lancet. 1:930 (Apr. 8) 1911.
6 Hagenbuch, M.: Beitrag zur Kenntnis der Strumitis. Mitt. a. d. med. Grenzgeb. d. Med. u. Chir. 33:181, 1920-21.
7 Burhans, E. C.: Acute thyroiditis. Surg. Gynec. and Obst. 47:478 (Oct.) 1928.
8 Link: Quoted by Burhans.
9 Cleland, J. B.: Purulent infiltration in and around the thyroid gland. M. J. Australia. 1:790 (May 28) 1927.
10 Bothe, F. A.: Nonsuppurative acute thyroiditis. S. Clin. N. Amer. 11:1449 (Dec.) 1931.
11 Hallberg, C. A.: Thyroiditis. Ann. Clin. Med. 1:261 (Jan.) 1923.
12 Wilcox, M. B.: A case of suppurative destruction of the thyroid with resulting myxedema. Nebraska M. J. 10:100 (Mar.) 1925.
13 Roger, H., and Garnier, M.: La glande thyroïde dans les maladies infectieuses. Presse méd. 7:181 (Apr. 15) 1899.
14 Clute, H. M., and Smith, L. W.: Acute thyroiditis. Surg. Gynec. Obst. 44:23 (Jan.) 1927.
15 Deaver, J. B., and Burden, V. G.: Suppurative thyroiditis. S. Clin. N. Amer. 9:1017 (Oct.) 1929.
16 Vianny, M.: Du traitement des adénomes thyroïdiens suppurés (Strumites). Lyon chir. 20:820 (June 21) 1923.

DISCUSSION

Dr. George A. Moore, Brockton, Mass.: I would like to record a case of acute thyroiditis I saw about two years ago; a man who had spent ten years in the Panama Zone and had been treated several years after that, for malaria. He had an enlarged, firm thyroid which seemed malignant. He was seen by an internist who concurred with my diagnosis. He continued to run a very high temperature and we searched for malaria many times and were unable to find it and finally operated upon him.

The thyroid was adherent to the underlying structures and I sacrificed one of the parathyroids. His convalescence was uneventful. The pathological report from Dr. Shields Warren was thyroiditis.

CARCINOMA OF THE SMALL INTESTINE*

BY HORACE K. SOWLES, M.D.†

CARCINOMA of the small intestine is rather uncommon and yet not so rare but that it may be worth while to have a little discussion of it particularly in regard to diagnosis, because it is a condition in which the diagnosis is very seldom made before operation. My interest in the subject was stimulated by the fact that due to a curious turn of chance, I happened to have seen five cases, which is, perhaps, a little unusual in the experience of one operator, the previous small groups of cases which have been reported having been gathered from the records of large clinics.

For instance, Gotten of Memphis was able to find only four cases of carcinoma of the small intestine in the records of twenty thousand patients at the Polyclinic Hospital, and Judd, reporting the cases at the Mayo Clinic up to 1919, found only seventeen. This report of Judd's was supplemented by Rankin and Mayo up to 1929 during which time they found eighteen additional cases, making a total of thirty-five from the Mayo Clinic. In the records of the Massachusetts General Hospital, I found only six cases in the last ten years.

The literature on the subject is not very abundant and the figures in regard to the incidence of the disease show considerable variation. According to Judd, some clinics reported that as high as 3 per cent of all intestinal carcinomata were found in the small intestine. At the Mayo Clinic, however, where he had checked very carefully both the records and the pathological reports, he found that the incidence of carcinoma of the small intestine was only 0.06 per cent of all the intestinal carcinomata. The total figures from the Mayo Clinic in 1929 were 35 cases of carcinoma of the small intestine compared with 4597 of the large bowel and 4335 of the stomach.

There is no obvious explanation as to why carcinoma should be so relatively rare in the small intestine. There are various theories which may be more or less interesting but not conclusive. Some of these are as follows: Because of the fluid nature of the contents of the small bowel, there is relatively less irritation; another, because of the alkalinity or other special inhibi-

*Read before the New England Surgical Society at Boston, September 29, 1933.

†Sowles, Horace K.—Chief Surgeon, Lawrence Memorial Hospital. For record and address of author see "This Week's Issue," page 971.

tory action of the secretions; another, because of the absence of any fixed and abrupt angulations throughout the small intestine while, on the other hand, the colon has a content of a very different nature, also considerable stasis and fixed flexures which may possibly explain the more frequent malignancy in that organ.

As regards the symptoms of the disease, the individual picture varies somewhat but the basic symptom in all cases has been that of intermittent partial intestinal obstruction. All the patients have had abdominal cramps or distress, gas in the stomach, and much gas in the small intestine manifesting itself by spasms of pain and by loud rumbling noises which have been present in practically all cases.

The lumen of the intestine is apparently temporarily obstructed for a few hours or so and then the patient may get relief for several days or even several weeks before another attack. As the disease advances, the symptoms of obstruction with sudden severe abdominal cramps become more frequent and sooner or later all cases have had nausea and vomiting. The stage at which this nausea and vomiting may occur depends upon two things, the completeness of the obstruction and its nearness to the pylorus, because the more complete or the higher the obstruction, the earlier we will have nausea and vomiting.

The first attack is usually of short duration and is followed by apparently complete recovery. Weeks or months may go by before another acute obstruction occurs but as the disease progresses, these attacks are apt to be more severe and more frequent. The nausea and vomiting become very troublesome and in some cases have been aggravated merely by the sight of food because the attacks always follow soon after the taking of food. The loss of weight has been a very constant symptom. Rankin reports an average loss of twenty-eight pounds in his series. According to Rankin, a rather severe secondary anemia has been a prominent symptom but in my experience and in the experience of some other writers, the anemia has not been an important part of the picture, at least during the earlier stages.

I believe the reason why anemia has not been prominent in most cases is due to the type of growth which has a tendency to develop dense cicatricial constrictions rather than large ulcerating surfaces. Consequently, there has been relatively small loss of blood from this type of lesion. In fact, it is quite unusual to find the story of tarry stools although in many cases it is possible by careful repeated examinations to get positive tests for occult blood.

In regard to general physical examination, there is usually nothing abnormal to be found, particularly in the early stages. Later on there is very apt to be a marked loss of weight and possibly a moderate secondary anemia. In no case have I been able to feel anything abnormal on palpation of the abdomen, but some reports describe a typical palpable mass which is freely movable although tender and seems to slip away from under the examining fingers. The only other positive abdominal finding is a considerable amount of gas in the small intestine which often gives very marked gurgling and rumbling noises.

The x-ray is helpful from the negative standpoint in that by x-ray we can usually eliminate the question of disease in the stomach, duodenum, or gall bladder for in these cases, the mistaken diagnosis of peptic ulcer or gall bladder disease is often made because of a similarity in the digestive symptoms. Gotten suggests that if an x-ray is taken, a flat plate of the abdomen should be taken first before any barium is given. If this plate shows dilated loops of small intestine, then it indicates an obstructive lesion somewhere above the ileocecal valve. Under normal conditions, the x-ray should not reveal gas in the small bowel.

In many cases, when the lesion is high in the jejunum, the barium x-ray of the stomach and upper bowel does give a clue to the diagnosis because there is tremendous dilatation of the duodenum and first portion of the jejunum which may be differentiated from the stomach shadow. As a rule, however, fairly extensive and careful x-ray studies are necessary in order to establish a diagnosis of malignancy of the small bowel. (In fact, the records show in these cases that a diagnosis is rarely made before a laparotomy is done.)

As regards the pathology of carcinoma of the small intestine, these lesions are of the adenocarcinoma type, and may represent the various grades of malignancy. Grossly, as I have stated, the growth is of the cicatricial ring type rather than of the large ulcerative type. This lesion causes gradually increasing obstruction of the lumen of the intestine.

In the majority of cases metastasis occurs early. Rankin states that one of every three of his cases had definite palpable metastases at the time of operation.

The treatment is, of course, purely surgical and the ideal operation is an excision of the tumor followed by an aseptic type of end-to-end anastomosis. Even though there are definite metastases present, it is just as easy and just as safe to do an excision and an end-to-end anastomosis as it is to do a side-to-side short circuit around the growth. Therefore, unless the growth is large and immovable, there is no real reason for leaving it behind. In the earlier operations of this series an excision was done, the ends of the bowel closed, and then a side-to-side anastomosis was made. However, with our present technique of doing an aseptic end-to-end anastomosis, this is the operation of choice. Rankin is pessimistic regarding prognosis and states that in his series no patient has lived longer than

three years. The average length of life following operation has been less than a year.

In connection with the above, I wish to report the following case histories:

I. Female, aged 46, was admitted to the Lawrence Memorial Hospital in Medford May 17, 1926 with the following story. During the last three to four years she had lost considerable weight, had been troubled with gastric distress, and had vomited at times. She had never vomited any blood and had never noted any dark-colored stools. She complained of no other symptoms. She was given x-ray studies, including a barium meal and Graham test for gall bladder disease. These showed a persistent constriction over the greater curvature of the stomach which was diagnosed as a probable carcinoma of the stomach. The gall bladder failed to visualize. Under the diagnosis of probable carcinoma of the stomach, a laparotomy was done. The stomach and duodenum were normal. The duodenum was somewhat dilated but the rest of the intestinal tract was apparently normal. The gall bladder was large and thickened and contained stones. The gall bladder was removed. The pathological report was cholecystitis and cholelithiasis. The patient made a comfortable convalescence and was discharged fourteen days after operation. The day before she went home she complained of nausea, vomited once, and said she had gas pains in the epigastrium. After discharge from the hospital the troublesome gas pains and vomiting continued. The vomiting became more severe until it occurred after nearly every meal. She finally was readmitted to the hospital six weeks after discharge with a diagnosis of subacute obstruction. Visible peristalsis could be seen in her upper abdomen after anything was taken into the stomach. An exploration was made under a diagnosis of intestinal obstruction. The jejunum and upper ileum were tremendously dilated. There was a small, annular growth in the upper ileum causing apparently nearly complete obstruction. This tumor was excised, the ends of the bowel closed, and a lateral anastomosis was done. The pathological report was adenocarcinoma of moderate malignancy.* The patient made an uneventful recovery. She is perfectly well at the present time, seven years after operation, and weighs forty pounds more than she did when she left the hospital.

II. Female, aged 36, admitted to the Faulkner Hospital March 11, 1930. Her chief complaint was pain in the epigastrium with persistent nausea and vomiting. The duration of the symptoms was seven months for which time she had been troubled with marked indigestion, severe intermittent gas pains, and very marked loss of weight. She vomited everything that she ate. Laparotomy was performed. The upper ileum was tremendously distended down to a point where there was a constricting growth at about the mid-portion of the ileum. Below this growth, the ileum was collapsed. This tumor was excised, the ends of the bowel were closed with purse-string sutures, and a side-to-side anastomosis made. The pathological report was adenocarcinoma, grade 3. The patient made a fairly good recovery, complicated by an acute phlebitis of the leg, and was finally discharged thirty days after operation. She did very well for two years and then began to have a recurrence of symptoms. She had nausea and vomiting after every meal so that she could not bear to take any food because of the discomfort which immediately followed. During six months she had lost weight steadily, going from 130 to 85 pounds. She was readmitted two and a half years after the first operation and after taking twenty-four hours in which to overcome her extreme dehydration by means of intravenous glucose solution and subcutaneous salt solution, an exploration was made. There was a large, hard, nodular mass involving the retroperitoneal region about the head of the pancreas and behind the duodenum. Pressure from this mass caused practically complete obstruction of the third portion of the duodenum. It was impossible to remove the mass and a posterior gastroenterostomy was performed to relieve the obstruction. She made a fairly good recovery although continuing to have occasional attacks of nausea while in the hospital, but she gained a little weight and was discharged three weeks after operation. She died four months later, thirty-four months after the first operation.

III. Male, aged 43, was admitted to the Massachusetts General Hospital in June, 1931 with a story of vomiting for eleven months and more recently vomiting of everything which he had taken into his stomach. He had lost twenty-four pounds in weight. Physical examination was negative and the first impression was probable gall-bladder disease or ulcer of the duodenum. He was studied for some little time on the medical side with repeated x-ray examinations. The first barium meal showed a small residue in the stomach at the end of twelve hours and showed some definite spasm of the stomach and duodenum. The x-ray interpretation was definite secondary signs of ulcer, but no filling defect and no definite ulcer were seen. The gall bladder x-rays were negative. A week later another barium meal was given. This time they could distinguish a very much dilated jejunum which partially obscured the shadow of the stomach and a diagnosis was made of an obstruction in the upper jejunum. He was transferred to the surgical side and was operated on July 2, 1931. The upper jejunum was tremendously dilated. There was a constricting tumor of the jejunum about twelve inches from the ligament of Treitz, no palpable metastases in the mesentery, and no sign of metastases in the liver. This tumor was excised and an end-to-end anastomosis was done by means of the Young clamp. The patient made a very uneventful recovery and started to gain weight while still in the hospital. He was discharged two weeks after operation. The pathological report was adenocarcinoma of high-grade malignancy. At the present time, twenty-six months after operation, the patient reports that he is perfectly well.

IV. Male, aged 35, admitted to the Lawrence Memorial Hospital May 18, 1933 with a diagnosis of acute appendicitis. Ten days before admission he had been seized with abdominal pain in the right lower quadrant accompanied by nausea and vomiting. This subsided after a day but the soreness remained. There was another attack of pain the day before admission but less severe. He was seen by his local doctor and sent into the hospital where he was admitted with a temperature of 99.2°, pulse 90, respiration 22, white count 12,400. There was definite tenderness and spasm over the right lower quadrant. He was operated on under the diagnosis of subacute appendicitis. The appendix was swollen and edematous but there was a mass two inches in diameter involving the middle ileum with numerous metastatic mesenteric glands and numerous nodules in the liver. A specimen was removed for diagnosis but resection was not done because the disease was evidently inoperable and there did not seem to be any imminent danger of obstruction to the ileum. The pathologist reported adenocarcinoma, grade 3. The patient died three months later.

V. The last case is not my own but one that I saw with Dr. F. G. Balch, Sr., at the Faulkner Hos-

pital, where Dr. Balch operated on him. Male, aged 35, was admitted in December, 1929 with a story of stomach trouble for five or six months. The probable diagnosis was peptic ulcer. He had a dull, gnawing type of pain and also a definite sharp pain at times which came on several hours after meals, and much gas not always related to the pain. He had suffered a few attacks of vomiting. He thought he had lost five or six pounds in the last few months. Between attacks, he felt perfectly well. Examination was negative except for a good deal of gas gurgling in the small intestine. Exploration showed a band of omentum adherent near the base of the cecum. This was drawn tightly across the lower ileum apparently causing obstruction. The ileum above this region was collapsed but on following upward along the ileum for about eighteen inches, the ileum became normal again. No pathology was felt in the region of the stomach or the rest of the abdominal cavity. He went home from the hospital three weeks after operation and was readmitted again ten days later with a story that since leaving the hospital he had been having constant abdominal cramps with some nausea and vomiting. As soon as he ate solid food, it was followed by vomiting. He was re-operated one month after the first operation under the diagnosis of subacute obstruction. There was marked dilatation of the first two feet of the small intestine at which point there was a constricting growth, and below it the small bowel was entirely collapsed. There were two small glands in the mesentery which were soft and movable. The growth was excised, the ends of the gut were closed with purse-string sutures, and a side-to-side anastomosis was done. The patient made a good recovery. The pathological report was adenocarcinoma of the small intestine, grade 3. Three years after the excision of the carcinoma the patient reported that he had been losing weight for the last six months, his color was bad, he tired easily, and had some pain in his stomach. On examination he had a moderate secondary anemia with a red count of 3,800,000. On a diet this improved slightly but he still was not well. He said that his digestion was poor and he had a good deal of gas in his stomach and occasionally some vomiting. Nothing definite could be made out on physical examination, but a recurrence was suspected. The patient died of recurrence forty months after operation.

In conclusion we can say that carcinoma of the small intestine is relatively rare as compared with carcinoma of the other portions of the gastro-intestinal tract. The primary symptoms are those due to an intermittent obstruction and, later on, loss of weight and moderate secondary anemia. The duration of the symptoms may be from a few weeks to several years and the average is about one year. The erroneous diagnosis of peptic ulcer or gall bladder disease is often made. In suspected cases, repeated tests of the stools for occult blood are indicated. As a further means of making a diagnosis, careful x-ray examinations should be made. Before giving barium, a flat plate of the abdomen is advisable in order to determine whether or not there is pathological gas in the small intestine. Treatment is resection with end-to-end anastomosis. Prognosis, according to Rankin, is poor. This small group has happened to show a somewhat better prognosis.

I thought some of you might be interested in the clamp we are using, two Kocher clamps joined together by an anchoring device on the shank, and the bowel can be cut off with a cautery close to the clamp, making aseptic ends. Then the ends can be sewed, and the clamps withdrawn. This is a clamp which has been devised by Dr. Young.

DISCUSSION

Dr. Philemon E. Truesdale, Fall River, Mass.: Dr. Sowles has described all the important features of this condition. He has made it clear that there is difficulty in making the diagnosis. My experience is limited to one case. The patient was a woman, forty-five years of age, who entered the hospital in August, 1914 with a diagnosis of acute intestinal obstruction. It had been stated in the history that she had other attacks of a similar nature but not so severe.

On physical examination the upper abdomen was distended, but the lower portion of the abdomen was not distended. Naturally, we thought of pyloric obstruction but the patient vomited bile. Then we considered pancreatitis, but when the stomach was deflated with a stomach tube, no mass could be felt. Yet this patient was very sick. We operated upon her, expecting to find pyloric obstruction. There was no obstruction at the pylorus, no sign of ulcer, nothing abnormal about the gall bladder, and the pancreas was normal. In exploring the abdomen further I happened to come upon a small mass about as large as an English walnut and brought it to the surface. It was an annular carcinoma of the jejunum. It was resected and an end-to-end anastomosis was made. The patient recovered. I have examined her record and found that she died one year later from metastasis to the liver.

In these cases, especially when the intestine is obstructed, I doubt if the diagnosis can be correctly made before operation. In fact, the surgeon is fortunate if he finds the lesion during operation. The element of chance, as in my case, plays an important part in the discovery of the tumor.

The illustration* represents the specimen of the jejunum resected in the case reported above. The carcinoma appears in the form of an annular growth constricting the intestinal lumen at the center of the specimen.

Dr. Alfred M. Rowley, Hartford, Conn.: I have enjoyed Dr. Sowles' presentation of this subject. I think he has had an unusual experience, meeting five such cases. Certainly, carcinoma and carcinoid intrinsic tumors of the small bowel are comparatively rare; extrinsic tumors, metastatic tumors are not so rare.

Why the rarity? Dr. Sowles has spoken of the alkalinity. This does not entirely satisfy as some of the appendages to the small bowel, such as the biliary ducts, are subject to intrinsic intraductal carcinomata. We have met three such cases in the last three years. Also we had one case of carcinoma of a patient, persistent mesenteric duct. Embryologically, the small bowel is a primordial structure. This may possibly explain its greater resistance to disease.

I have reviewed the number of cases that we have had at the Hartford Hospital in the last eight years. This represents, exclusive of eye, ear, nose and dental work, about 40,000 operations and approximately 15,000 laparotomies. We have had two carcinomata,

*Not submitted for reproduction.

one sarcoma and one carcinoid tumor of the small bowel.

Pathologically, it may be difficult to distinguish diffuse carcinomata from sarcomata. One of our cases was difficult to classify. However, it was reported on by our pathologist and confirmed by Dr. Ewing as a large cell carcinoma and not a sarcoma.

DR. WALTER C. SEELYE, Worcester, Mass.: The case at hand is interesting in that the terminal metastasis was a carcinoma of the small intestine. This was a young woman only twenty-two years old who came in on the first occasion with a complete obstruction due to carcinoma of the transverse colon which was resected and an end-to-end anastomosis made with perfect recovery. Two years subsequently she came in with a large tumor filling the entire pelvis, extending above the umbilicus. Operation revealed a large ovarian tumor which was a metastasis from the transverse colon tumor, showing colloid carcinoma. This was removed, the other ovary and tube were normal and no other abnormalities were found in the abdomen.

Within a year after that time she came in again presenting identically the same picture as the last, with the pelvis and lower abdomen full of a tumor the same size as the first one. This was removed and found to be a tumor of the other ovary similar to the first one, and with identical pathology.

A fourth metastasis occurred about a year later causing complete obstruction from carcinoma in the ileum. That showed an annular carcinoma of small size and this in turn was resected with an end-to-end anastomosis, relieving her of the obstruction, but in this last operation the abdomen showed besides this annular carcinoma of the ileum, a marked and diffuse carcinomatosis of the peritoneal cavity.

DR. ERNEST M. DALAND, Boston, Mass.: I looked up the records of the Pondville State Hospital. There were 3800 cancer cases with 450 autopsies. There was no case of cancer of the small intestine.

DR. GEORGE A. MOORE, Brockton, Mass.: I should like to ask Dr. Sowles if he found any records in the literature of primary carcinoma of the small intestine causing intussusception. In 1929 I saw a man of seventy-five who had primary adenocarcinoma of the ileum causing intermittent obstruction for about six months, and finally an intussusception. At operation excision and end-to-end anastomosis were done with an uneventful recovery.

Kassemeyer in 1912 stated that in a series of 199 cases of intussusception resulting from tumors, 85 were malignant in origin.

DR. TRUESDALE: What part of the ileum?

DR. MOORE: About three feet from the ileocecal valve.

DR. FRED B. LUND, Boston, Mass.: Unless I am mistaken, a not uncommon location of intestinal carcinoma has been the fourth portion of the duodenum. I had one such case where the resection was difficult on account of the depth. I have seen many intussusceptions caused by tumors of the intestines, one of them showing two such intussusceptions. A man came in to the Carney Hospital two or three years ago, looking as if he had suffered from malignant disease for a long time. He had acute intestinal obstruction and we found two intussusceptions, both of the jejunum, and resected them. The tumors were quite black and the pathologic report was melanotic sarcoma of the small intestine, producing the intussusceptions. Melanotic tumors are usually metastatic from disease of the eye. His eyes were normal. He went home and lived about a month, and the primary source was never found.

DR. HORACE K. SOWLES, Boston, Mass.: I was hoping Dr. Miller might say a word on this because I happen to know he has been over the records of the Massachusetts General Hospital very carefully and checked up the pathological reports on all cases, and I believe he told me some little time ago that he was able to find in all about fourteen in his entire review.

It is rather interesting that two of these cases were operated upon without finding the lesion, and I think Dr. Truesdale will probably confirm my statement that it would be very easy to overlook one of these little tumors of the small bowel if you didn't have a pretty definite suspicion it was there. You can run your hand very easily through the abdomen without touching it, and that is what happened in two of these cases, because in one case there was no suspicion of its being there and in the other case apparently adequate cause was found for the obstructive symptoms.

About the question of intussusception, I didn't find any particular mention of that in the literature, but it seems perfectly logical mechanically that a tumor of this sort, a small, constricting carcinoma or fibrosarcoma could easily cause intussusception. A tumor of the small bowel I should suspect might be the most common cause of it in adults. As to the fibrosarcomas and the sarcoma type of tumors: according to the literature they are also rare, probably with about the same degree of frequency as the carcinomata.

In regard to carcinomata of the duodenum, I did not consider those in my paper. Carcinoma of the duodenum, especially at the papilla, is not uncommon. Whether it originates in the biliary ducts or intestinal mucosa is sometimes a question.

MORTALITY RATES

Telegraphic returns from 86 cities, with a total population of thirty-seven millions for the week ending April 14, indicate a mortality rate of 12.4 as against a rate of 11.1 for the corresponding week of last year. The highest rate (20.4) appears for Richmond, Va., and the lowest (4.3) for Yonkers, N. Y. The highest infant mortality rate (20.9) appears for El Paso, Texas, and the lowest for Canton, Ohio, Forth Worth, Texas, Oakland, Calif., and Schenectady, N. Y., which report no infant mortality.

The annual rate for 86 cities is 12.6 for the fifteen weeks of 1934, as against a rate of 12.1 for the corresponding period of the previous year.

SUMMARY OF DEATHS AND DEATH RATES (ANNUAL BASIS) FROM AUTOMOBILE ACCIDENTS PER 100,000 ESTIMATED POPULATION FOR 86 CITIES FOR CORRESPONDING PERIODS OF 1934 AND 1933.

	Week ending April 14		First 15 weeks	
	1934	1933	1934	1933
Total deaths	150	128	2,381	2,090
Death rate	20.9	17.8	22.1	19.4
Deaths due to accidents in city	119	103	1,948	1,691
Death rate	16.6	14.4	18.1	15.7

—*Bureau of the Census.*

EXCISION OF THE THORACIC OESOPHAGUS FOR CARCINOMA*

With Construction of an Extra-Thoracic Gullet

BY GEORGE GREY TURNER, M.S.†

THE patient was a man 58 years of age, one of the best type of North country miners, who was always bright and cheerful, and anxious to coöperate in every way with those in charge of his case. He gave a history of difficulty in swallowing of only eight weeks' duration. His complaint was that solid food appeared to stick at the lower end of the breast bone, and that he could only manage to swallow foods of the consistency of porridge and well-masticated bread. After treatment from his

FIG. 1. Radiogram showing constricting neoplasm in middle of œsophagus.

own doctor he improved a little, but the disability was really progressive, for during the eight weeks he had lost no less than 3 st. in weight. There were no external physical signs whatever, but the x-ray appearances were characteristic of a constricting neoplasm of the middle of the œsophagus (Fig. 1).

On April 5th of this year (1933) gastrostomy was carried out, and at the same time it was determined that there were no secondary deposits in the liver or in the glands along the lesser curvature of the stomach. The man commenced to pick up immediately. After careful consideration I determined to attempt to carry out the operation for the removal of the thoracic œsophagus by the pull-through method which I described in my Henry Jacob Bigelow lecture.‡

On Friday, April 28th, under general anæsthesia, the abdomen was opened by a high median incision. The left lobe of the liver was separated from the diaphragm and the abdominal œsophagus exposed. About 10 c.cm. of a ½ per cent solution of novocain was injected through the hiatus into the œsophageal tunnel in the hope of displacing the pleura out of harm's way. The peritoneum in the neighborhood of the hiatus having been incised, the finger was inserted into the posterior mediastinum and enucleation of the œsophagus commenced. I found that I could carry my finger all round the growth, but I could not get above it. Having accomplished as much as possible by this route the venue was changed to the neck. The cervical œsophagus was exposed through a transverse incision dividing the sternomastoid. By working downwards with the finger in the cellular tissue I was able to reach the upper limit of the growth and to separate the œsophagus from its connexions down to that point. The gullet was then ligatured and divided low in the neck and the upper end was brought to the surface through an independent button-hole incision to the margins of which it was carefully fixed. The division of the œsophagus was made with the cautery and its cut end and the upper part of the tunnel were well smeared with Bipp. The ligatured end was allowed to retract into the mediastinum and the neck wound was carefully closed. A return was now made to the abdomen but on drawing on the œsophagus it was found to be still firmly attached. With the fingers working in the posterior mediastinum it was eventually completely loosened, the left vagus nerve being divided with the scissors low down while the right nerve was not seen though it may have been torn through. At this stage it was clear that a hole had been torn into the right pleura and that air was rushing very freely into the chest cavity. This was arrested by stitching the left lobe of the liver over the œsophageal hiatus like a lid. The œsophagus was then ligatured at the cardia and cut away, the stump being carefully buried in the stomach by a series of purse-string sutures. The patient made a very good recovery from this operation and without any unusual disturbance. After four weeks he was ready to go home to complete convalescence.

On June 20th he returned to the hospital and on the 28th I carried out the first stage of the operation for the construction of an antethoracic œsophagus. This was carried out by making a tube from the skin of the front of the chest for the middle portion after the plan devised by Rovsing of Copenhagen. The lower end was completed by the Tarvel method, using an isolated portion of jejunum for the purpose. The orifice of the upper end of the œsophagus at the root of the neck was connected with the skin tube by a further skin plastic operation. During convalescence the patient developed a fistula at the junction of the skin tube with the intestine, and

*Reprinted from *The Lancet*, December 9, 1933, p. 1315.

†Turner, George Grey—Professor of Surgery, University of Durham. For record and address of author see "This Week's Issue," page 971.

‡*New England Journal of Medicine*, 1931, ccv., 657, 674.

this required two operations for its repair. On the 206th day after the excision of the œsophagus the patient ate a meal consisting of three slices of bread and butter with a poached egg, half a pint of tea, and two pears (Fig. 2). This he enjoyed thoroughly and in his own words "he was able to swallow it just as well as ordinary." The specimen (Fig. 3) is a beautiful example of a comparatively localised squamous-celled carcinoma, and though it has invaded the muscular wall, there is no evidence of extension beyond.

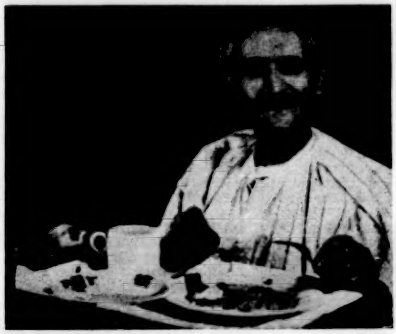


FIG. 2. Patient enjoying a high tea some seven months after the excision of his œsophagus.

Of course it is obviously far too soon to judge of the result from the point of view of the treatment of malignant disease, but this case at least shows that the operation which I have for so long had in mind can be carried to a successful issue and it does demonstrate the great value of the plastic construction of a new gullet outside the chest.

FIG. 3. Showing comparatively localised growth in excised œsophagus.

The Lancet Office,
7, Adam Street, Adelphi, W.C.2.

CESAREAN SECTION. A REVIEW OF FOUR HUNDRED AND THIRTY-SIX CASES

BY CORNELIUS T. O'CONNOR, M.D.*

IN a review of cesarean section where a comparison is being made of the different types of operations it would seem that several factors must be considered if the analysis is to have value. (1) The series, if the classical and low cervical types of operation are to be compared, should be contemporaneous. A comparison of the results of classical section done, for example, from 1905 to 1920 with the results of laparotrachelotomies done from 1925 to 1932 is not fair to the older operation. Refinements in operative technic have been made. Almost everywhere the incidence has increased so that elective sections, or sections early in labor are done more frequently. (2) If a clinic reserves the classical section for those cases where speed is essential, e.g., eclampsia, heart disease, placenta previa, etc., its classical group comprises poorer risks as compared with the low cervical, unless the latter shows a definitely greater incidence of ruptured membranes, longer labors or other factors that would increase the chances of infection. (3) A comparison of cases having a test of labor is necessary. (4) One should not consider the mortality and morbidity reports of highly skillful operators or well-organized maternity clinics, and compare these results with those of city surveys that embrace every degree of prenatal care, organization and operative ability, and then attempt to draw conclusions favorable to one or the other type of operation. (5) The gross mortality should be stated. It seems only sensible to subtract fatalities when the patient is moribund, or practically so, before the operation. "Corrections" made for deaths after operation should be done carefully if at all. When made, the details should be stated so that the reader may have access to all the facts.

Many series have been reported in the last

*O'Connor, Cornelius T.—Visiting Gynecologist at St. Elizabeth's Hospital, Brighton, Mass. For record and address of author see "This Week's Issue," page 971.

few years. They have been almost unanimous in showing better results with the low cervical type than with the classical section.

It may be interesting to give briefly the incidence as it occurs in various localities. Humpstone[1], shows a frequency of 1 in 22 in Brooklyn. Adams[2], 1 in 89 in Portland, Oregon. Skeel and Jordan[3], 1 in 44 in Cleveland. Johnston and Smith[4], 1 in 36 in Texas. Greenhill[5], 1 in 48.5 from the Chicago Lying-In Hospital. Preissecker[6], in Vienna a percentage of 3.08. Where yearly reports have been followed it is found (Hawks[7], Ilkewitz and Selitzky[8], and Courtiss and Fisher[13]) that the incidence has risen markedly in the last decade as compared with the previous one. The incidence, with the exception of those hospitals having an organized home district, may be higher than that of the community at large.

The mortality from the operation as published from various centres is as follows: Preissecker[6] (Vienna) gives 5.7 per cent gross for classical sections, laparotrachelotomies and extraperitoneal operations combined. Seeley[9] shows a mortality in the city of Detroit up to 1925 of 13 per cent, and since then to 1930 of 4.43 per cent. Skeel and Jordan[3] found in Cleveland a 7.6 per cent mortality in 827 classicals and 2.8 per cent in 108 cervical sections. Humpstone[1] has 4.3 per cent. Hawks[7] (New York) reported 3.6 per cent for 582 cases of both types. Thompson[10] reports from Los Angeles 1322 cases of both types with a mortality of 4.2 per cent. The range was from none to 9 per cent according to the hospital. Phaneuf[11], reports 418 personal cervical sections with a gross mortality of 5 per cent, and 198 transverse low cervical operations with 3 per cent gross mortality. At the Chicago Lying-In Hospital Greenhill[5] analyzed 874 cervical sections (1.26 per cent mortality) and 147 classical (4.76 per cent mortality). E. v. Ammon[12] collected figures from a thorough review of the American and German literature. There were 5,865 laparotrachelotomies (4.1 per cent gross and 2.1 per cent corrected mortality), and 2,685 classic operations (5.9 per cent gross and 2.6 per cent corrected mortality). Courtiss and Fisher[13] (Boston) report from 1911 to 1919, 214 classical sections (10.2 per cent mortality); from 1920 to 1931, 376 low cervical sections with 1.33 per cent mortality, and 409 classical sections with 6.4 per cent mortality.

During the years 1924 to 1932 inclusive, there were performed at the Cambridge Hospital, Cambridge, Massachusetts, and St. Elizabeth's Hospital, Brighton, Massachusetts, four hundred and thirty-six cesarean sections. These were performed by forty-four different operators. There were, during this period, thirteen thousand one hundred and fifty-four deliveries. The incidence of section is then, approximately one in thirty. The indications were as follows:

Repeat	124
Disproportion, vertex presentation	91
Disproportion, breech presentation	9
Toxemia (nephritis, 4 cases)	37
Placenta previa	27
Eclampsia	20
Previous repair	13
Heart disease	6
Separation of placenta	14
Fibroids	5
Inertia uterus	4
Elderly primipara	4
Elderly primipara breech	2
Miscellaneous	14
	370
Not specified	66

The types of anesthetics, and the frequency of their employment are as follows:

Ether	381
Spinal	31
Novocain infiltration	20
Avertin	2
Morphia and gas oxygen	1
No anesthetic (coma)	1
Total	436

There were no deaths directly attributable to the anesthetic.

In the four hundred and thirty-six cases there were twenty deaths, a mortality of 4.6 per cent. Eliminating two moribund eclampties and a case of Addison's disease practically moribund, the corrected mortality is 3.9 per cent. Contrasting the two types of operation, classical and low cervical, we find two hundred and ninety-six classicals with twelve deaths, or 4 per cent. Correcting for the above-mentioned three cases, all of which occurred in the classical series, we have nine deaths or 2.1 per cent mortality for the classical section. There were one hundred and thirty-three low cervical cases with seven deaths, or 5.3 per cent mortality. No corrections were necessary. There were three Hirst cases with one death, and four sections plus hysterectomy with no deaths.

There were four hundred and forty-three babies, twins occurring in seven cases. There was a gross fetal mortality of forty-two cases, 9.5 per cent. The causes are as follows: (1) Prematurity, seventeen cases. (2) Stillborn, sixteen cases. The cause was unknown in three of these. Maternal hemorrhage accounted for four. Eclampsia caused four. Toxemia resulted in five (two babies had edema and one probable septicemia). (3) Cerebral hemorrhage caused two deaths. (4) Monstrosities occurred twice. (5) Congenital heart was diagnosed twice. (6) Pylorospasm and skin infection accounted for one case. (7) There was one case of myelogenous leukemia. Autopsy was performed in three cases (7 per cent).

The following factors were analyzed: (1) distention, (2) morbidity, (3) morbidity after a trial of labor, (4) the maternal mortality and morbidity, and the fetal mortality in placenta

previa, toxemia, separated placenta and eclampsia.

1. *Distention*

In two hundred and eight cases the surgeon's notes and nurse's bedside charts were carefully followed in order to determine the relative incidence, and degree of distention in both types of operations. These were taken from only one hospital, as the nurse's notes were considered essential in getting a proper evaluation of this factor, and these notes were present in only one of the two series. The division was made into (1) none or practically none, (2) slight to moderate, and (3) marked. This division is necessarily subjective. By following the daily notes carefully the attempt has been made to have the division as accurate as possible. It is impossible to separate slight from moderate in some cases, and so they have been grouped together. Table 1 shows the results.

Morbidity was then analyzed in those cases which had had a test of labor. (Table 3.)

There were seventy-one cases which had a test of labor. There were forty-four classical sections with three deaths (7.5 per cent). There were twenty-seven low cervical cases with three deaths (11.5 per cent). The morbidity was less following the low type of operation. The details are as follows: In the seventeen afebrile classical cases the record is present in twelve. In eleven, labor was slight. In one case labor lasted twenty-four hours. Two cases had vaginal examinations and two had ruptured membranes (one for sixteen hours, and another for twenty-four hours). The last was also one of the two cases in which vaginal examinations were done. In the fifteen afebrile low cervical cases an opinion as to labor could be formed only in six cases. It varied from twelve to forty-eight hours. The membranes were ruptured in only one case, and in this case they had been ruptured for many hours. As compared then with the afebrile classical group labor was longer in the afebrile cervical sections.

TABLE 1

DISTENTION

	Classical			Low Cervical		
	None	Slight to Moderate	Marked	None	Slight to Moderate	Marked
Total 211 cases Classical 154 Low Cervical 57	15 (10%)	117 (75%)	22 (14%)	7 (12%)	41 (72%)	9 (16%)
Cases in Labor 48 Classical 28 Low Cervical 20	1 (4%)	19 (68%)	8 (28%)	1 (5%)	14 (70%)	5 (25%)

No great difference was found in the amount of distention occurring either in the total series, or in those cases that had been in labor.

Morbidity was the second feature analyzed. Any case showing a temperature, after the first forty-eight hours, of over one hundred degrees for twenty-four hours (bi-daily readings) was considered morbid. Table 2 illustrates this factor for the whole group.

TABLE 2

MORBIDITY (WHOLE GROUP)

Classical 303			Low Cervical 133		
Afebrile	Moderate	Marked	Afebrile	Moderate	Marked
185 (61%)	74 (21%)	39 (18%)	95 (72.5%)	22 (17%)	14 (11%)

There was less morbidity in the low cervical group. In the classical group with moderate morbidity one had coryza, two bronchitis, two mastitis, one pyelitis, one sinusitis and six wound infections, one of these resulting in a utero-abdominal sinus which closed two weeks after discharge from the hospital. The same group in the low cervical type revealed two wound infections, and one case of pyelitis. No other possible extragenital causes were found in the morbid groups.

A comparison of the febrile groups gives the following data: In the classical group with slight morbidity the record is good in three. The membranes were unruptured in all. Two had a twenty-four hour test of labor, and one of these had two vaginal examinations. One had slight labor. Putting against this group the same in the low cervical type, the four cases give data as follows: Three had long labor and membranes ruptured for a long while. The fourth had unruptured membranes, but a forty-eight hour labor and one vaginal examination. In those cases, then, which had slight morbidity, the low cervical group had a longer test and greater incidence of ruptured membranes than did the classical group.

The classical sections with moderate morbidity amounted to ten cases with data for seven. All had a long labor. Four had ruptured membranes, one with a forceps attempt. Three had vaginal examinations. The low cervical group followed by moderate morbidity comprised four with data in two. Both had short labors with unruptured membranes. One of these two had a vaginal examination. In this group, then, followed by moderate morbidity, the two cervical

sections did not have so good a test of labor as the seven classical cases.

The classical group with marked sepsis consists of eleven cases with data in seven. All seven had ruptured membranes, were in labor a long while, and were examined vaginally. Of the three deaths, occurring in these classical sections that had a test of labor, all came in the markedly morbid group. Four low cervical cases had marked sepsis. One had repeated attempts at delivery at home. One had ruptured membranes for five days. One had a long labor and unruptured membranes. In both classical and low cervical types, where marked sepsis followed, labor was long in all cases, membranes were ruptured a long while except in one instance, and vaginal examinations had been made often.

If one subtracts the results of those cases in labor from the whole group, the morbidity of those cases that did not have a test of labor will be shown. There is found a difference of four per cent in favor of the cervical section. The greater difference in the group as a whole is, then, accounted for by the group that had a test of labor.

4. (*b*) *Eclampsia* 20 cases

There were nineteen classical sections. There was one Hirst operation. The maternal mortality was five, or 20 per cent. Inasmuch as two were moribund the corrected mortality is 16 per cent. Marked distention was very common in these cases and the convalescence as a rule quite stormy. Five babies died, or 25 per cent.

4. (*c*) *Separation of Placenta* 14 cases

A toxemia was definitely present in eight instances. In three there was no toxemia. The presence or absence was not noted in two, and another case, labeled separation of the placenta, had a bicornate ruptured uterus, and really comes under the heading, Rupture of the Uterus. There were no maternal deaths. Ten infants died, 70 per cent. Eight were stillborn and two died shortly after birth from prematurity. There were eight classical sections. Seven were afebrile. Four of these were noted as toxic. One had moderate morbidity with phlebitis. There were two cervical sections. Both were toxic. One was afebrile, and one showed moderate morbidity. Three had hysterectomies. Two were afebrile and one had a slight fever. One case was toxic, one non-toxic, and one a case of bicornate uterus.

TABLE 3

MORBIDITY OF CASES IN LABOR

Classical 44				Low Cervical 27			
Afebrile	Morbid			Afebrile	Morbid		
	Slight	Moderate	Marked		Slight	Moderate	Marked
17 (39%)	6 (11.5%)	10 (23%)	11 (25%)	15 (55.5%)	4 (15%)	4 (15%)	4 (15%)

TABLE 4

(A) PLACENTA PREVIA—27 CASES

Classical 19				Low Cervical 8			
Afebrile	Morbid			Afebrile	Morbid		
	Slight	Moderate	Marked		Slight	Moderate	Marked
9 (47.7%)	4 (21%)	3 (15.1%)	3 (15.1%)	6 (75%)	0	2 (25%)	0

There was one death (3.7 per cent). Nineteen were classical sections with one death (5 per cent). Eight were low cervical cases with no deaths. Forty-seven and seven-tenths per cent of the classical were afebrile as compared with sixty-one per cent in the whole group of classical sections, and thirty-nine per cent in those which had a test of labor. In each of the three classes of morbidity, slight, moderate and severe, there was one case packed. In the two low cervical cases with moderate morbidity neither was packed. One, however, had a vaginal examination at home, and the other entered the hospital with ruptured membranes.

The fetal deaths were five, approximately 18 per cent. The low cervical group showed less morbidity than the classical.

4. (*d*) *Toxemia cases* 37—deaths 4, or 10.8 per cent.

There were 21 classical sections with one death—5 per cent.

There were 14 low cervical sections with three deaths—21.4 per cent.

There was one Hirst section with no death.

There was one hysterectomy with no death.

Table 5 shows the morbidity.

There is practically no difference to be noted between the two types of operation. Nor is there to be noted any significant difference between this group and the group as a whole (see table 2). In the classical group of twenty-one

cases only one had been in labor. Another had ruptured membranes for an indeterminate period with two vaginal examinations. In the group with marked fever there was one case of extrusion of the bowels. In the cervical group of fourteen, two cases had been in labor. One of these had ruptured membranes.

Eight of the babies died (21.6 per cent). Four were stillborn. One died of cerebral hemorrhage on the tenth day. Three were premature. The incidence of distention was noted in ten classical sections. Marked distention occurred twice. In nine low cervical cases, marked distention occurred once. The Hirst case had moderate morbidity. The hysterectomy is interesting: a few hours after classical cesarean operation the blood pressure fell, the pulse rose and the uterus enlarged. The abdomen was reopened, and a typically apoplectic uterus removed. Recovery was complicated by pneumonia and marked distention.

The degree of toxemia was noted in thirty-three of the thirty-seven cases. In eleven of twenty classicals it was marked, and in eight moderate. Two of the latter were cases of hypertension and valvular lesions with only a little albumin.

The toxemia was marked in five out of eleven low cervical operations, moderate in five, and mild in one. The four deaths all occurred in the markedly toxemic patients, one having in addition mitral stenosis and dying of heart failure forty-eight hours after delivery. Four of the cases could be labeled definitely as nephritic.

A review of these cases shows that there were complicating factors in many instances such as previous repairs, a history of former disasters to the baby, heart disease, transverse presentations, small pelves, large babies, and sometimes the rapid progress of toxemic symptoms in spite of treatment. Most of the patients were either primiparae or patients who had previous difficult labors. The average age was thirty. Eight babies died, or nearly 22 per cent. Most of these were premature. Many of the mothers were treated for weeks before being delivered.

TABLE 5

TOXEMIA—37 CASES

Classical				Low Cervical			
Afebrile	Morbid			Afebrile	Morbid		
	Mild	Moderate	Marked		Mild	Moderate	Marked
14 (66%)	2 (10%)	2 (10%)	3 (14%)	9 (64%)	1 (8%)	2 (14%)	2 (14%)

MATERNAL DEATH REPORTS

A. Toxemic Cases

1. Para 2. Aet. 31. Pregnancy seven and one-half months. B. P. 170/100, albumin and edema ++, in bed for one month. Twin pregnancy with elective low cervical section under spinal anesthesia and enterostomy on fifth day. Died of intestinal obstruction on sixth day.

2. Para 3. Aet. 27. Pregnancy eight and one-half months. B. P. 160/90. Urine boiled solid. Elective low cervical section under ether. Temperature elevated from the second day. Died on the fourth day from septicemia with no evidence of peritonitis.

3. Primipara. Aet. 26. Hypertension, 175/110. No albumin. Mitral stenosis decompensated. Not in labor. X-ray shows twins. Classical elective section under ether. Died in forty-eight hours of cardiac decompensation with marked vomiting and distention.

4. Eclamptic moribund .....

5. Eclamptic moribund .....

6. Eclamptic, primipara. Aet. 30. Elective classical section under ether. Died of hemolytic streptococcic septicemia on the fourth day.

7. Primipara. Aet. 18. Eclamptic. Hirst type under ether. Died of diffuse peritonitis, fifth day.

8. Primipara. Aet. 28. Membranes ruptured and started in labor because of toxemia. In labor four hours with several convulsions. Patient had grs. 9 of sodium amytal, and scopolamine grs. 1/150 s.c. at start of labor. Pulse rapid and weak. B.P. at onset of labor 140. Albumin L. T. Classical section under local anesthesia. Enterostomy forty-eight hours later for obstruction. Recovered from obstruction. Ran a septic course with phlebitis of legs and right arm, and pulmonary infarct. Transfused. Seven weeks postpartum, while seemingly on road to recovery, developed infarction of left lung and died four days later. Autopsy showed fibrinous pleurisy with tremendous amount of fluid in pleural cavity. Uterus well healed. Old infarct of lung. Old thrombophlebitis veins of broad ligament and saphenous veins.

9. Primipara. Aet. 27. Addison's disease and condition poor before operation. Classical section under ether. Became drowsy twelve hours postoperatively with high temperature. Died in afternoon of second day. Autopsy revealed atrophy of adrenals.

B. Cases in Labor

10. Para 2. Aet. 30. Difficult labor with first baby. P. I. labor twenty-six hours in duration. X-ray showed a very large baby of 10 lbs. 11 oz. Hirst operation under ether. Marked distention and gradually rising pulse and temperature. Died on fifth day of peritonitis and septicemia.

11. Primipara with a ten-hour test of hard labor. Classical section under ether. Normal convalescence for three days. Sudden death on the third day of (?) embolus.

12. Primipara. Aet. 30. Toxic since six and one-half months pregnant. B. P. 160/90. Albumin. L. T. Pulse 110 and impending eclampsia. Thirty-two hours of labor with good labor for eight

hours. X-ray showed large baby (8 lbs. 12 ozs.). Died one hour after operation. Uterus firm. No bleeding. Low cervical section (ether). (? cause of death).

13. Primipara. Aet. 21. Funnel pelvis. Good test of labor. Floating head. Classical section under ether. Temperature and respiration elevated next day. Definite signs of pneumonia. Died on fourth day of lobar pneumonia of left lung. Type undetermined.

14. Primipara. Aet. 41. Slight labor with one vaginal examination. Membranes ruptured four and one-half hours. (Baby 9 lbs. 7 ozs.) Died of diffuse peritonitis on the fifth day. Classical section under ether.

15. Primipara. Aet. 27. Fifteen-hour labor. Fully dilated. Repeated attempts at delivery at home. Low cervical section under ether. Baby died of cerebral hemorrhage. Mother died on the fourth day with diffuse peritonitis.

16. Para 2 Aet. 30. Labor lasted forty hours. Membranes ruptured thirty hours. One vaginal examination. Classical section under ether. Stillborn baby. Died on the fourth day of septicemia.

C. Placenta Previa

17. Para 2. Aet. 33. Flowed at home for fourteen hours before operation. One vaginal examination. Stillborn baby. Classical section under ether. Died six hours after operation from shock from hemorrhage. No transfusion.

D. Elective, Non-Toxic and Not Flowing

18. Para 2. Aet. 44. Funnel pelvis. Previous difficult labor. Low cervical under ether. Died on eighth day with diffuse peritonitis.

19. Para 2. Aet. 30. Low cervical under ether. Baby 8 lbs. 8 ozs. Patient went into shock at end of operation. No external hemorrhage. Uterus firm. Died a few hours later.

20. Para 4. Aet. 31. Repeat. Low cervical under ether. Pulse weak immediately after return to room. Flowing freely. Air hunger and cyanosis. Died three hours after operation. Cause of death evidently shock from hemorrhage.

SUMMARY

1. In an analysis of 436 cesarean sections the incidence was 1 in 30.

2. Ether was the anesthetic in most cases.

3. The gross mortality was 4.6 per cent. With the elimination of three patients, moribund before operation, it was 3.9 per cent. For 296 classical sections it was 4 per cent, corrected for the above three, to 2.1%. For the 133 laparotrachelotomies it was 5.3 per cent. Fifty per cent of the deaths occurred in toxic patients; thirty per cent in those who had been in labor; five per cent in placenta previa and fifteen per cent in clean, elective, non-toxic patients in good condition.

4. No difference in the frequency of occurrence or degree of distention was noted in 208 cases (154 classical and 54 low cervical).

5. The morbidity was less following the low cervical group, both for the whole group and those having a test of labor, but there was little difference noted in those cases that had not had a test of labor. The slight difference was in favor of the low cervical group.

6. Neither operation was safe when labor had been long, membranes had been long ruptured, and vaginal examinations had been made.

7. The mortality in 27 placenta previa cases was 3.7 per cent maternal, and 18 per cent for the babies.

8. The maternal mortality in 20 eclampsia cases was 20 per cent (corrected 16 per cent). Recovery was usually stormy. The fetal mortality was 25 per cent.

9. There were no maternal deaths in 14 cases of separated placenta; 70 per cent of the babies died.

10. In 37 cases of toxemia, 21.6 per cent of the babies died. There were 21 classicals with one maternal death, and 14 cervicals with three maternal deaths. All deaths occurred in the markedly toxic patients.

11. There was a gross fetal mortality of 9.5 per cent.

12. There were 203 classical sections in patients not in labor, not toxic and not flowing, i.e., in sections of elective clean cases in good condition, with no maternal deaths. There were 82 low cervical sections in the same class, with three deaths (3.7 per cent mortality).

13. There were 93 classical operations in patients who either had had a test of labor, were toxic, or had antepartum bleeding, with twelve deaths (three moribund before operation), a corrected mortality of about 10 per cent. The low cervical operation comprising the same type of case resulted in four deaths in 51 cases (8 per cent).

14. Autopsies were done on two (10 per cent) of the mothers and three (7 per cent) of the babies.

15. The individual deaths are summarized.

COMMENT

The low cervical section should show less morbidity than the classical in those patients who have had a test of labor. However, those who have had a long labor with rupture of membranes for a long while, and especially with vaginal examination or attempts at delivery, are not good risks with either operation.

The mortality of 16 per cent in the cases of eclampsia is lower than some other series, e.g., Gordon[14] with 26 per cent, in 104 cases, and Miller[15] with 19.3 per cent in 31 cases. Holland[16] found 32 per cent. In the 20 cases reviewed by the writer, morbidity was so common and so frequently severe, distention so marked and the recovery so frequently a stormy one, that the mortality might easily have been greater. It would seem in view of the lower mortality in eclampsia treated conservatively,

e.g., Lichenstein[17] 9.4 per cent, Solomons[18] 10.3 per cent, Williams[19] 13.3 per cent and others, that cesarean section should be reserved for those cases where disproportion would indicate the operation regardless of the presence or absence of eclampsia, or for those cases not improving under conservative treatment.

The mortality in the cases of toxemia (10.8 per cent) is high. The frequent presence of factors such as large babies, previous repairs and so forth made section a necessity in many instances. The fact that warning signals of impending eclampsia were the reason in many cases, and the fact that these symptoms occurred in spite of intensive hospital treatment make us hope that the newer method of Arnold and Fay[20] of fluid restriction, concentrated glucose intravenously and so forth will be of greater value than our medical treatment in the past. Moreover, the more frequent use of local anesthesia, in view of the work of Stander[22], is suggested wherever surgery is necessary in toxemics.

The only death in the placenta previa series occurred from shock due to hemorrhage. The routine presence of a transfusion team ready to operate, in addition to the cesarean team as suggested by Bill[21] seems logical. Moreover, as postoperative hemorrhage occurred in cases other than those of previa it is logical to have a donor present in every section. This precaution might have prevented some fatalities in the series.

Because of the greater risk when patients have been in labor a long while, it is good obstetrics for the general practitioner to have a consultation with an obstetrician before labor in any case where successful delivery from below is doubtful. The consultant should make a careful obstetrical examination including the use and appreciation of the aid afforded by good x-rays (lateral and anteroposterior) so that, if possible, section may be done as an elective measure, or so that he may with equanimity allow the case to go into labor to full dilatation.

So, too, the poor results of both classical and cervical operations in cases neglected or in labor for prolonged periods with ruptured membranes and vaginal examinations indicate the performance of hysterectomy when the uterus is infected, and hysterectomy, or some form of exclusion, such as exteriorization of the uterus, when probably or potentially infected. The results in this class of case have not been good. This is not in agreement with other series that have been reported.

The writer wishes to express his appreciation to the Rev. Father Thomas J. Brennan and Miss Josephine Thurlow, R.N., superintendents of St. Elizabeth's Hospital and the Cambridge Hospital respectively, to Charles Kickham, M.D., and James Lincoln Huntington, M.D., the chiefs of obstetrics, to William Haley, M.D., chief of the staff of St. Elizabeth's Hospital, to Sister Elizabeth Marie and Miss Estelle Ord, librarians, and to the members of the staffs whose cases made possible this study.

REFERENCES

1 Humpstone, O. P.: Survey of cesarean section at Methodist Episcopal Maternity. Am. J. Obst. & Gynec. 17:663 (May) 1929.

2 Adams, T. W.: Cesarean section statistics for city of Portland, Oregon, from 1926 to 1929. Am. J. Obst. & Gynec. 23:511 (April) 1932.

3 Skeel, A. J., and Jordan, F. F.: Consideration of cesarean section, with survey of 1047 cases in Cleveland registration area in 5 years. Am. J. Obst. & Gynec. 23:172 (Feb.) 1932.

4 Johnston, R. A., and Smith, F. B.: Cesarean sections in Houston, Texas; statistical study. South. M. J. 24:725 (Aug.) 1931.

5 Greenhill, J. P.: Analysis of 874 cervical cesarean sections performed at Chicago Lying-In Hospital. Am. J. Obst. & Gynec. 19:613 (May) 1930.

6 Preissecker, E.: Die Kaiserschnittfrage; die Indikationen zur Sectio caesarea im statistischen Weltbild mit besonderer Berücksichtigung Europas. Zentralbl. f. Gynäk. 56:645 (Mar.) 1932.

7 Hawks, E. M.: Maternal mortality in 582 abdominal cesarean sections. Am. J. Obst. & Gynec. 18:393 (Sept.) 1929.

8 Ilkewitz, W.; Lewi, M., and Selitzky, S.: Der Kaiserschnitt in Moskau in den Jahren 1921-1927. Arch. f. Gynäk. 142:389, 1930.

9 Beeley, W. F.: Abdominal cesarean sections in Detroit in 1930. Am. J. Obst. & Gynec. 24:68 (July) 1932.

10 Thompson, W. B.: An analysis of cesarean sections performed in Los Angeles from 1923 to 1928 inclusive. Am. J. Obst. & Gynec. P. 392, 1930.

11 Phaneuf, L. E.: Cervical cesarean section; report on end-results of 418 consecutive operations. Am. J. Obst. & Gynec. 21:498 (April) 1931.

12 Von Ammon, E.: Statistisches zur Kaiserschnitt frage aus den Jahren 1915-1928. Arch. f. Gynäk. 140:66, 1930.

13 Courtiss, M., and Fisher, J. C. V.: Analytic study of 1,000 cases of cesarean section. Am. J. Obst. & Gynec. 23:679 (May) 1932.

14 Gordon, C. A: Survey of cesarean section in Borough of Brooklyn, City of New York. Am. J. Obst. & Gynec. 16:307 (Sept.) 1928.

15 Miller: Cesarean Section at the Hartford Hospital 1904-1927.

16 Holland, E. J.: The result of a collective Investigation into Caesarean Sections Performed in Great Britain and Ireland from 1911-1920. Obst. & Gynec. Brit. Emp. 28:358, 1921.

17 Lichtenstein, F.: Expectant treatment of eclampsia. Zentralbl. f. Gynäk. 46:5 (Jan.) 1922.

18 Solomons, B.: Treatment of eclampsia. J. Obst. & Gynec. Brit. Emp. 29:416, 1922.

19 Williams, J. W.: Text, sixth edition 1930 p. 674. Obstetrics.

20 Arnold, J. O., and Fay, Temple: Eclampsia. Surg. Gynec. & Obst. 55:129 (Aug.) 1932.

21 Bill, A. H.: Placenta previa. Am. J. Obst & Gynec. 21: 227 (Feb.) 1931.

22 Stander, H. J.: Studies in anesthesia, anoxemia, anhydremia and eclampsia, with certain deductions concerning treatment of eclampsia. Am. J. Obst. & Gynec. 12:633 (Nov.) 1926.

THE PREVENTION OF CRIME*

The Gangster In The Making

BY L. VERNON BRIGGS, M.D.†

MUCH has been written on the prevention of crime and numerous investigations and surveys have been made in recent years with the object of developing some plan for the reduction of the enormous incidence of crime, especially among juvenile offenders. So far as I know, all this work up to the present time has not resulted in a single dent being made in the crime record; on the other hand there is a continual increase in the numbers of youthful gangsters, with their hold-ups, assaults and murders.

The commissions for the study and prevention of crime which have been appointed by the different branches of our government have usually been composed of people most of whom, having no real experience with the criminal, have had to depend upon evidence presented to them by criminologists, volunteer enthusiasts, one-sided specialists or people with a hobby. This hearsay evidence has then been sifted and a plan formulated for the report, which has usually been pigeon-holed and in any case has been of little practical value.

Let us look at this great question in a practical way. Let us discard assumptions, theories and plans for reforming the already hardened criminal and strike at the source from which gangsters and other young criminals develop. It was not until we began to attack the sources of insanity, as Dr. Douglas A. Thom has so ably demonstrated in his habit clinics, that any scientific progress was made toward its prevention. Any board of health in a community where there is an epidemic does not merely treat the victims of that epidemic and feel satisfied that it is doing all that is possible to protect the community, but it strikes at the source of the outbreak—bad water, impure milk or whatever else.

In the prevention of crime we have never struck at the source in a practical way. Among the hundreds of criminals whom I have examined a very appreciable percentage, old as well as young, but especially the young offender of today, began their criminal careers between the ages of ten and twenty, and recently some are beginning at an even earlier age. Many of these young criminals have been well brought up to the time of their school life, and they often do well at school; many graduate from the grammar school and some few have spent two or more years in high school. There is no question of mental deficiency in the majority of these cases. Hundreds of our boys who graduate from grammar school or leave high school before graduation walk out into the world with no prospect of employment and not a soul reaches out a hand to help them. Some of course find employment through the influence of their families or friends or fill vacant positions awaiting such material; but there is a large group who have no friends to give them jobs and whose families, on account of economic or domestic conditions, are unable to help them. Discouraged after efforts to obtain legitimate employment, and usually being in unfavorable environment, they either join the corner gang or get suggestions from moving pictures, radio stories or detailed front-page newspaper accounts dealing with the adventure of crime. Among the boys they meet on the corner are graduates of our so-called "reform schools" (which have proved to be schools for education in crime) who talk over with them the crimes they see depicted in the movies, hear described over the radio or read of in the newspapers, or tell their own experiences as to the easy way of getting money and of the thrills they get from wild rides in stolen automobiles and daring hold-ups. The young gangster, as a rule, has little interest in safe blowing or house breaking. What most of these boys want is the thrill of adventure, even if there is no financial gain. If caught early in their careers they are usually sent to the "reform schools". A large number among the young criminals whom I have examined were sent at twelve, fourteen or sixteen years of age to one of these schools of crime for appropriating an automobile for a "joy ride", or some other minor delinquency; they have told me that there they met other boys more experienced in crime than themselves, who told them exciting stories about the more serious crimes of hold-up or burglary, with whom they planned a life of crime together after their discharge. Some boys make good their escape from the reform schools in order that they may immediately begin their hold-ups and depredations, and so little effort is made to return them to the schools that they are generally free to pursue their avocations until they are finally convicted for more serious crimes.

Another link in the development of the young gangster is the want of classification of these boys after their first arrest. Thrown together with hardened criminals in jails and prisons they listen to the stories of their companions with admiration and a desire of emulation born

*Condensed from a paper read at the Fall Meeting of the New England Society of Psychiatry, at Butler Hospital, Providence, R. I., October 9, 1933.

†Briggs, L. Vernon—President of the New England Society of Psychiatry. For record and address of author see "This Week's Issue," page 971.

of a natural love of adventure. I once questioned a thirteen-year-old boy whom I saw walking in the yard of one of our jails in company with an extremely tough-looking inmate. He told me he was there for stealing candy and cigarettes and expected to go to court the following day. Of his companion he said, "Gee, he's a great guy! He's been in prison many times. He has been telling me of his robberies. He has killed two men in his getaways. Gee, he's a great man!"

More than a hundred boys between fourteen and sixteen years of age are held in the Charles Street Jail every year and nearly as many in the Middlesex County Jail at East Cambridge, almost all of whom could safely be released while waiting for a hearing, according to Mr. Alfred F. Whitman, Ex-Secretary of the Children's Aid Association.

I wonder why so many young people of today are more interested in crime and criminals than in the prevention of crime? Is it the exploitation of crime through our modern channels which reaches every home in our land and which makes the gangster the hero of many susceptible young minds?

I cannot here take up the question of the lack of institutions or of any special provision for the scientific care and reform of this group. My present subject is prevention, that is attacking the causes of crime at its source and protecting these boys from the temptations of an environment which educates them in crime and gives them the desire for such thrill and inspiration as it provides. We know how ready and even eager the communities and even the legislatures are to punish these young offenders after they are caught and to provide the money to pay for their different arrests, their trials and temporary segregations where they are fed and clothed and often reëducated for further deeds of violence at great expense to the taxpayers. We know of the many associations and societies whose object is the reform of criminals, and the different welfare organizations which contribute to the support of their families but pay little attention to the prevention of delinquencies.

My plan would be for all these organizations or the communities which they represent to get together and form a personnel to be on hand when these boys graduate or leave school prematurely, to take them by the hand and guide them into normal pursuits. Such organizations throughout our states would cost less by many thousands of dollars than we now spend for the care of these individuals in after-life and would prevent an untold loss of life and property from depredations, hold-ups and burglaries; and it would add to the number of useful citizens who can take care of themselves, instead of forcing us to employ detectives, police and afterwards wardens at great expense, to watch over them for the rest of their lives.

When a boy is obliged to leave school, for whatever cause, a blank questionnaire should be furnished him to fill out which would inform the teacher what plans or desires he may have for the immediate future. If the reply shows that arrangements for him have not already been made, his questionnaire card should be turned over to the members of the follow-up organization, in whose hands the boy should be placed until they are sure that he is protected from dangerous influences and has a proper place in the community.

I agree with Professor Francis B. Sayre that the accepted methods of our day are not materially reducing crime and that prevention should begin with the child in the school. But I believe that the next step is to care for these young people the moment they leave school, by providing them with friends who will extend to them a helping hand, assist them to find employment and prevent their being led into lives of crime. Some plan such as I have suggested for helping the group who are now lost to the community because of neglect after leaving school should certainly be available, in addition to what is being done in the school. One would have to go farther than Professor Sayre's progressive program.

More than this, something effectual should be done to remove the continual suggestions of crime which come to children in nearly all classes of life from their earliest years. I believe that a campaign should be started to educate our censors of moving pictures, radio stories, etc., to the serious dangers of crime pictures and stories, which are probably now the cause of much crime in the State. Many of the young gangsters have told me that when the gangster business was dull and they were not meeting with much success they went to see crime pictures, to be "pepped up" and get inspiration and encouragement and to learn new methods for their work. They don't mind whether the story has a moral and the burglar is caught and punished; that does not interest them. What they want are the details and the mechanism of the crimes. They will tell you what the celebrated "Lone Wolf" told me when I asked him why, with his education and background, he was willing to take up his "profession", as he called it, of crime. He answered that it was because it was so lucrative and safe; he had studied statistics and found that 80 per cent of the criminals never were caught, and that of the remaining 20 per cent only four or five were convicted; he said it was "a dead open and shut gambler's chance".

Attorney General Bushnell some years ago urged the enactment of a law which should "ab-

solutely prohibit children in the formative period of their lives from attending any moving pictures which pair.ted violations of law in attractive colors". He said, "One spring afternoon recently when I passed a so-called 'movie palace' whose front was plastered over with lurid posters advertising the films to be seen there was a film whose hero was a dashing 'two-gun man', one of those thugs that exist only in the movies, rob only the rich and never the poor, are good to their wives and mothers and give dollars to the blind man on the corner. Over a space of nearly a block, waiting for the doors to be opened, was a line of several hundred little children, tightly clutching the coins which had been given them by hard-working fathers and mothers. Twenty-five years ago these same children would have spent the afternoon out-of-doors breathing God's pure air. . . . The movies have an infinite capacity for good. Some of the great historical films have been masterpieces; but it appears that for every one of these there are ten put out either dealing with sex irregularities or painting crime in rose-colored hues."

The following list of plays is quoted from a single issue of a Boston paper some time ago; today you will find them similar and even more startling: "Her Man," "Love in the Rough," "Doorway to Hell," "Sin Takes a Holiday," "Lady of Scandal," "The Big Pond," "Derelict," "Feet First," "Min and Bill," "A Lady Surrenders" and "Scarlet Pages"; and this after a new code of movie conduct had been ratified by the Directors of the Motion Picture Producers and Distributors of America, Inc.! "The Code," an announcement said, "will determine the character of motion pictures exhibited in 22,000 theaters in this country. Among other provisions, scenes of passion shall not be introduced when not essential to the plot (!). The sanctity of the institution of marriage and the home shall be upheld. Crimes against law shall never be presented in such a way as to show sympathy with the crime as against law or justice. Acts of murder or brutality shall only be presented in such a way as will not inspire imitation; methods of crime shall not be presented in explicit detail on the screen; revenge in modern times (!) shall not be justified as a motive." Anyone who attends moving picture shows will be surprised at the interpretation of the code shown in the films put on by this body of directors.

The *Boston Record* of May 1, 1933, printed a dispatch from Hollywood describing a new film: "Miriam plays the prim welfare woman's daughter, who rebels against repressions and steps out to taste life. Frederick will be seen as the man-about-town who helps her dig out what a young girl shouldn't know; Ralph plays a crook again, this time a petty larcener, who invites much sympathy and dies in the end."

A radio in one of the daily papers of "The Townsend Murder Mystery," reads: "Butler shot as he answers telephone—New tragedy of Townsend home claims Quintus Jones as victim—Detectives, rushing to the spot, find Jones lying by telephone in a pool of blood," etc.

An interesting page appeared in *Life* February 22, 1930. A hold-up man is pictured as having just shot and killed his victim. Above this pair is an advertisement of various popular makes of pistols for sale by a mail-order house in Denver, Colorado.

If the radio, and especially the moving pictures are not responsible for the education in crime of children under ten years of age, I should like someone to tell me how some of these youngsters get the information which they use so effectively to carry out crimes requiring a knowledge and skill which it would be impossible for them to have without some suggestion or information. I have made inquiries into the cases of a number of very young criminals and have obtained their photographs; for study, I refer briefly to a number of these:

F. R., aged 12, was indicted in Nashua, N. H., in 1928, for murder in the first degree, having killed another child of 9.

Two little brothers, aged 5 and 7, confessed to the murder of a three-year-old baby in 1929. After mutilating and killing the child, they buried the body.

In East Boston in 1926, three boys of 9 and 10 killed a five-year-old companion and threw his body into a pool of stagnant water after stripping him of his clothing.

In September, 1929, two boys, aged 9 and 13, buried alive a companion of 11. When dug up the victim was found to have a bullet hole in his body. These boys were tried for manslaughter.

In Paintsville, Kentucky, on April 2, 1930, a reform school boy, aged only 6, was convicted of manslaughter for slaying a child of 8, after an altercation over a piece of scrap iron which the two had sought to sell to a junk dealer.

In July 1929, D. N., aged 8, of Elizabeth, N. J., was paroled having slain his brother, aged 16, with a rifle, after a quarrel over the rifle.

In January, 1932, S. W., aged 14, slew a farmer for whom he was working in Norristown, Pennsylvania. He said that he shot his employer in order to get an automobile to go and see his mother, who was ill—a typical case of the result of suggestion from some source as to how to gain his end.

On November 2, 1931, P. S., aged 7, of Union, N. Y., shot and killed his sister because, he said, she teased him and spoiled his spelling book.

A few years ago a careful investigation was made in New York City of the space given to crime items in twelve of the leading newspapers. The sum of such items for a month in these twelve papers was 4,712, covering 89,862 inches of space. The percentages of crime news in relation to the whole varied from 11.87 per

cent in the *Evening Telegram* to 33.11 per cent in the *Daily News*. The survey was made four years ago and items of this nature have greatly increased since that time.

The court rooms in our cities are also schools for criminals. Youths bent on a criminal life can learn the methods of old and experienced wrong-doers in the court room. In notorious cases, especially hold-ups with a lot of thrill in them, you will not only find the court rooms crowded with gangsters in the making, but the corridors adjacent to the court rooms are also filled with persons anxiously awaiting a turn to get in and learn the intricacies of the trade of the safe blower, the artful methods of the hold-up man and the cunning of the murderer who puts his victim "on the spot". One of our Deputy Commissioners of Corrections says, "When I was in Court the other day I learned how to break into a safe, the names of the chemicals, the electrical tools and other articles used by safe-blowers." I again quote District Attorney Bushnell: He says, "I'd like to see the Court, in a rotten case, bar the doors and search everyone in the courtroom, and it would be surprising to see the number of fellows there who have records."

I feel sure, after all these years of experience, that if these evil suggestions could be removed or even partially controlled, and if an organization could be perfected by the State or by the communities therein, to give a friendly hand to these boys at the time they need it—which they virtually never receive today—instead of the unlimited attention paid to them later, it would be only a few years before we should see a lowering of the incidence of crime in Massachusetts. Only by such means, by attacking crime at its source, can real prevention be brought about. As the State now looks after the defective eyes, teeth, etc., of our school children, let it also look after their morals and the future of the comparatively few graduates and those who have to leave before graduation who are without friends or moral guidance at the most critical period of their lives.

The following brief summary of some typical cases of young criminals whom I have personally examined among thousands which have come to my attention will illustrate my subject:

H. J. G., aged 20, whom I examined in prison, came of a family well known to the leading social agencies, including the Family Welfare Society, the Little Wanderers' Home, The State Minor Wards, the Children's Mission, the Jamaica Plain Emergency Loan, the Lowell Social Service Exchange, the Brookline Court, the American Red Cross, the Children's Aid, the Provident Association and the Women's Educational and Industrial Union. All of these agencies were in touch with the family for several years, but I cannot find that any steps were taken to prevent this boy's becoming a criminal. He left school at 14 to go to work, having finished the sixth Grade and started the seventh. He joined a corner gang called the "Dirty Dozen," and spent much time with his companions loafing on the corners, going to dances and the movies in the evening. He was characterized as the "Baby-faced Robber," and was finally electrocuted for first degree murder, having shot and killed a Medford storekeeper during a hold-up.

A. F. D., aged 17, S. B. T., 18, and J. R. S., 17, were examined by me following a series of burglaries which ended when their car, loaded with loot, was held up by a policeman, whom they shot dead. All were indicted for murder in the first degree and convicted of murder in the second degree. Of these boys, A. F. D. began his thefts at 6 years of age. At 13 he made the acquaintance of a boy of his own age, H., who had escaped from the Lyman School, and they made a break which resulted in their both being put on probation. In spite of this, he is reported to have graduated from grammar school when 15 years of age with a "good record, no truancies and no tardiness." In the same year he was sentenced to five years at the Shirley Industrial School, but was again put on probation.

The second of this group, S. B. T., finished the sixth grade at the D. School when 16 years of age; his intelligence quotient is given as 83. Neighborhood influences were bad, as in all these cases. The head master of the school, nevertheless, "thinks he was a good boy up to the time he left." He really felt that "the boy was waiting for someone to hand him a job," which of course nobody did. He managed to get a radio, a crystal set. In fact these three boys were so much interested in radios that they never missed an opportunity to steal a radio from any house that they robbed. S. B. T. was a member of a gang of which his two companions and H. were also members.

J. R. S., the third of the group, left school at the age of 15, after completing the sixth grade. His family had been helped by the Eliot Church, the Associated Charities, the Overseers of the Poor, etc. He told me that he had little amusement in his life excepting from the movies, which he had begun to attend at the age of 11. He said, "I liked series of pictures, that I followed up. Saw Lon Chaney, Hundoz Bum (?), Phantom of the Opera, etc. His reading for the last six years had been confined to detective stories, "especially Flynn's".

I examined S. Z., aged 17, following his arraignment for the murder of a fourteen-year-old girl; he had committed many other serious delinquencies. He said that he began stealing candy and breaking into small shops at the age of 10. He was arrested several times for truancy and was sent to the Hampden County Training School, but ran away from there. At 14 he was arrested for breaking and entering and sentenced for two years to the Shirley School. In spite of his having previously run away three times from reform schools and staying out once for as long as four months before he was caught, and in spite of his previous record at the Hampden County Training School and of his staging a movie wreck which was discovered only in time to prevent disaster on the Boston and Maine Railroad, he was considered by the authorities of the school for discharge into the community, with the belief that he would do well. Up to the time of his residence in these "reform" schools he had been guilty only of truancy and petty delinquencies; when he escaped he continued his delinquency and spent most of his time with a gang of boys and girls. His reading had been confined to accounts of murders and other crimes in the newspapers.

I examined F. W. P., aged 19, after he had been confined for more than a year in jail awaiting trial for shooting a policeman in an effort to avoid ar-

rest. He left school at 15 and entered a manual training school for evening study, but spent three nights out of every five with girls at moving picture shows. He was one of those boys who enjoy thrills, which he began by speeding his automobile around corners on two wheels. He and another boy stole $700 in Liberty Bonds and $50 in cash from a safe in his father's room and he also took his father's automatic revolver. He said, "Every movie I saw which showed what happened in the West always had a revolver in it." With the revolver and the money he went to a hotel in Springfield, flashed his revolver about and behaved generally like a "bad man" from a Western movie. Followed to his room and questioned by a policeman in plain clothes he asked the latter to telephone his father and on his return he pointed the revolver at him and told him to get out and, as he refused to do so, the boy shot him in the breast. He then telegraphed his father that he had "shot a bull" and boarded a train for Boston. On the train he continued bragging and displaying his revolver, and telling the other passengers that he had "shot a bull". A policeman finally boarded the train to arrest him, and the boy fired several shots at him from which the officer subsequently died.

Another young murderer whom I examined was C. T., aged 19, of Italian parentage, the fourth of nine children. His father was cruel to him and when he married a second wife all the children of the first wife left home. The father said that he played truant while he was in the sixth grade in school, but there is no record of this in the school, the teachers reporting that he was "a well-conducted boy, who never gave any trouble; noted for his very polite manners and good nature." Like all of his brothers and sisters he left school as soon as he was of working age, but got no employment that gave him a regular wage. The Society for the Prevention of Cruelty to Children and the Associated Charities were both appealed to in his case, but he was nevertheless allowed to drift into a criminal career. At 14 he attempted larceny and was committed to Shirley. Later he was again committed to Shirley and afterwards paroled; after this he committed a robbery in Ashburnham and defaulted on bail of $2,000, and still later he was found guilty of breaking and entering a store in Fitchburg. Finally he committed a murder and was executed before he was 20.

In the hundreds of cases cited in the daily press and many whom I have examined I have found that nearly all of them show the necessity of such work as I have suggested to keep these boys away from evil associates and suggestions on leaving school, and to prevent their drifting into lives of crime.

ATRESIA OF THE CERVIX ASSOCIATED WITH HEMATOMETRA

BY EUGENE E. ALLEN, M.D.*

FOLLOWING is the report of a case of unusual interest which has recently come to my attention, and of which there is little found in the literature relating to the subject.

In the *Medical Journal of Australia*, dated August 6, 1932, I. Graham of New South Wales, describes a case of hematometra and uterine maldevelopment. In his case, which is similar to mine, the cervix was found undeveloped and the uterus contained chocolate-colored blood.

History: A white female patient, aged 15 years, entered the Massachusetts State Infirmary complaining of pain in the lower abdomen and back, associated with an abdominal mass.

Her past history was essentially negative, except for the fact that she had never menstruated.

The family history is irrelevant.

Present Illness: Five months previous to her admission she began to have cramps in the lower abdomen, associated with a sharp pain in the lumbar region. These pains lasted for three days. The pains occurred regularly each month until the time she was admitted. In the last two attacks the pains lasted for one week each time. At no time were there any signs of blood. Four months previous to her admission a mass appeared in the left lower quadrant. Each succeeding month the mass was larger, and was associated with more or less continuous lower abdominal pain. Nausea, vomiting and dizziness always accompanied the attacks. She sought advice at another hospital and was examined under ether. The diagnosis at that time was retained menses due to atresia of the vagina. She was referred to our hospital for hysterectomy.

Physical Examination: On physical examination the patient appeared fairly well developed and nourished. She weighed 95¼ pounds and was five feet in height. Her usual weight was 104 lbs. Her carriage was erect. The temperature was 99.6°, the pulse 84, and the respirations 22. Mentally she appeared normal. The tongue was moist and protruded in the midline. All the teeth were present and in good condition. The mouth was clean. The tonsils were hypertrophied. There was considerable acne of the face, chest and back. The reflexes were normal. The color of the hair was light brown. The eyes reacted to light and distance; their color was blue. The breasts were normal, virginal in type. The heart and lungs were normal. On abdominal examination the fundus of the uterus was found to be enlarged to within two fingers of the umbilicus and freely movable. The abdomen was dull to percussion. No sounds were heard by the stethoscope. No fetal parts were felt. There was tenderness on palpation and the abdominal recti muscles were tense.

Vaginal Examination: Normal nulliparous genitalia. The introitus admitted the tip of the little finger.

Extremities were negative. Blood pressure was 118/72.

Laboratory findings were negative. Under ether a small Sims speculum was admitted. A very slight leukorrhea was present. On the floor of the vagina and running the length of it was a mound of tissue about 3 mm. in height. The vaginal canal was about 6 cm. long. There were no vaginal fornices. Instead of a normal cervix with an os there was a small thickened circular area about the size of a quarter. Bimanual examination showed the uterus

*Allen, Eugene E.—Senior Physician, Female Hospital, State Infirmary, Tewksbury, Mass. For record and address of author see "This Week's Issue," page 971.

fluctuant and enlarged to about the size of a four months' pregnancy. No masses were felt in either vault. Ovaries and tubes were not palpable. It was felt that something could be done to save this patient for possible childbearing and not subject her to the serious operation of hysterectomy. Consequently she was operated on in an attempt to construct a patent uterovaginal opening. An incision was made in the center of the thickened circular area described. Goodall & Hanks' dilators were used to enlarge the opening. A thick chocolate-colored blood oozed out, estimated at about 1000 cc. Her convalescence was uneventful. Later examination showed that the opening had closed. She then developed an acute attack of tonsillitis. Following this complication she again experienced what were probably the symptoms of menstruation and it was found that the uterus was again becoming distended.

Again she was taken to the operating room. This time the uterine cavity was entered in the same manner as before and the inner and outer edges of the opening drawn together with catgut sutures. About 500 cc. of thick mucilaginous-like dark red blood was expressed. A number 24 soft rubber catheter was fastened in situ, being removed the following day. Her convalescence from this operation was rather stormy as the vaginal discharge became somewhat purulent and the temperature rose to 103°, with a white cell count of 22,000. She was given appropriate treatment, but with the subsidence of this complication the tonsillitis, which she previously had, recurred. She gradually overcame this complication. Vaginal examination again showed the uterovaginal opening to have closed and once more, five weeks following the second operation, she was removed to the operating room and a modified Pozzi operation was done, the incision being stretched to about 1¼ inches in diameter. About 30 cc. of a foul-smelling purulent sanguineous fluid oozed out. Iodoform gauze drain was left in situ for twenty-four hours. Convalescence was fairly good, the temperature going occasionally as high as 102°. Seventeen days after operation she was given potassium permaganate douches and sitz baths. Examination showed a patent os with no discharge or tenderness. The patient felt well and was up and about the ward. Since the last operation, she has had two normal periods while in the hospital, staining seven pads each time. Her weight on discharge was 112½ lbs. She had a tonsillectomy and adenoidectomy done following the third vaginal operation, and now feels perfectly well.

Since her discharge from the hospital, I have had two communications from her, one by letter and one by a visit and she has had two more normal periods, each time experiencing only slight discomfort.

RUPTURED BICEPS TENDON: REPAIR

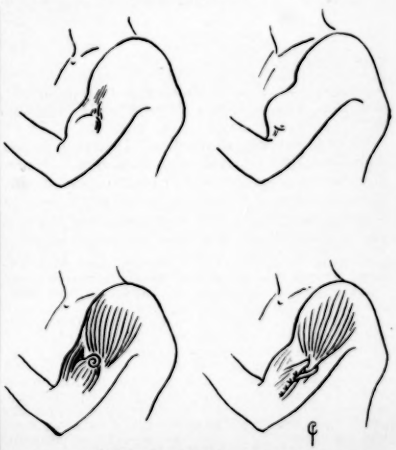
BY FREDERIC JAY COTTON, M.D.,† AND GORDON M. MORRISON, M.D.†

RUPTURE of the biceps tendon is not at all unusual. Nearly always it occurs at or after middle age. Rarely the tendon leading to the radial insertion gives way. This I think always occurs before fifty from major trauma, i.e., lifting. The picture is unmistakable, see figure 1. Repair is by direct tendon suture. I have operated on one case, which did well, but no end-result report is available.

Far commoner is the rupture of the long head, which gives way in a lift not always heavy, in an elderly laborer without previous recognized disability. The rupture is not that of a normal tendon, but of one worn and atrophic as the structures about the shoulder so often are in age.* The picture is typical and constant; see figure 2.

The break may occur at any point above the muscle belly, but commonly in the bicipital groove, often within the shoulder joint. The reaction is slight, often disregarded. The disability is definite in weakness, but often not conspicuous. Save for the ease of complete repair, the operation might often be debatable.

Much type has been wasted in discussing fixations by suture in the groove, or even through the drilled shaft. The matter is really almost ludicrously simple. There is one absolutely solid hitch to use. It is the heavy insertion of the deltoid on the antero-external face of the humeral shaft.



RUPTURE OF BICEPS TENDON.

FIG. 1. Upper left: Typical rupture of the long head.
FIG. 2. Upper right: Rupture of the tendon *below* the muscle belly—a rare accident.
FIG. 3. Lower left: Rupture *of the long head.* Coiling up of the snapped tendon into the muscle.
FIG. 4. Lower right: Tendon passed through the deltoid insertion back to the outer muscle belly into the mass of which it is sutured. The appropriate tension on tendon and muscle must be a matter of judgment.

*Codman and Akerson. The pathology associated with rupture of the supraspinatus tendon. Ann. Surg. 93: 348, 1931. Meyer. Spontaneous dislocation and destruction of tendon of long head of biceps brachii. Arch. Surg. 17:493, 1928.

†For records and addresses of authors see page 817, issue of April 12, 1934.

CASE J. R. Operated August 4, 1928, at the Boston City Hospital.

The incision is made on the lateral aspect of the arm over the middle third and over the insertion of the deltoid. The long head is dissected out. A "Kelly" forceps is then pushed beneath the deltoid and pulled down toward the insertion. The ruptured tendon of the long head was then pulled under the insertion of the deltoid and the tendon then sutured to itself and to the insertion of the deltoid.

The patient returned to work after six weeks.

CASE J. D., aged 49, yard-worker for a paper company. Seen March 9, 1931. He was lifting a log of 50 to 75 pounds when the right arm gave way. This was in January. He kept on at heavy work, then at light work until recently, but had to give it up.

He was operated on at the Faulkner Hospital, March 11, 1931. Typical operation: The torn tendon was carried through under the deltoid insertion. He made a prompt recovery, and the stitches were out after nine days. He was discharged April 2, 1931.

This patient, a small man of phenomenal muscular development, went at *hard* work promptly after three weeks, and the muscle hitch stretched a bit.

A second operation was done October 2, 1931, at the Faulkner Hospital. An incision was made through the scar. The hitch in the deltoid insertion had held, but probably had not been made short enough. At all events the outer head was slack. Fascia was used to take a reef in the muscle and tendon and he was kept in the hospital thirty-three days to make sure.

This time it held with a really restored muscle.

In no other case has there been slackening, or any loss in the effectiveness of the mechanical hitch, in operations under this technique in a not inconsiderable total of cases.

ABSTRACTS OF DR. CAMPBELL'S LECTURE

Charging that psychiatry has devoted too much of its energy in recent years to the classification of psychiatric cases into neat and arbitrary types, Dr. Charles Macfie Campbell, Professor of Psychiatry, Harvard University, in his second Salmon Memorial Lecture delivered April 20, 1934, at the New York Academy of Medicine, called for an "arbitrary respite from this activity" and urged the medical profession to concentrate "on the dynamic analysis of psychiatric problems and cases".

"One of the most important advances in psychiatry," said Dr. Campbell, "has been the fuller realization of the importance of the personal factor in the psychiatric case."

The interpretation of the psychosis as a maladaptation, and as a miscarriage of an attempt by the patient at a solution of his problem, instead of as a meaningless disturbance has, according to Dr. Campbell, advanced psychiatry both in its interpretation of the material it deals with and in its curative effects.

Dr. Campbell urged that the psychosis, the specific form of the patient's psychologic difficulty can be, and should be, studied as one section of the individual's life history, from which much understanding, both as to the nature of the individual and of his case may be derived.

In studying the psychosis it is much more important that the component elements be identified and understood than that they should be identified under conventional names.

The concern with classification and labelling of cases, Dr. Campbell believes, interferes with the appreciation of the dynamic nature of psychiatric problems.

A convenient classification of psychiatric cases can be achieved under the headings of organic, toxic and symptomatic psychosis. In some of these divisions the impersonal factors play a prominent part in bringing on the psychosis. A certain number of patients, too, can be classified according to specific types of vulnerability and their "breakdown" can be explained in terms of their weaknesses and the particular strains to which they were subjected.

There is left, however, even after such classifications, a large residue of rather serious cases which accumulate in the psychiatric hospitals and which constitute a serious challenge to the psychiatrist. In this residual mass are to be found the dementia praecox or the schizophrenic cases.

Dr. Campbell reviewed the question as to whether the dementia praecox group represents a type of psychiatric case in which an impersonal disease process is operating.

He expressed the opinion that "the intensive study of cases belonging to this group has not enabled one decisively to demonstrate the presence of an impersonal disease process revealed either by clinical symptoms or by histopathology".

FOUR INSTRUCTIVE PAMPHLETS

The Metropolitan Life Insurance Company has for distribution four pamphlets dealing with the family food supply, suggestions for good food at low cost, the baby, and diphtheria prevention.

A physician may use these brochures to advantage when it is desirable to provide his patients with concise information in these subjects. The importance of consulting a physician whenever there is evidence of departure from the normal is made clear.

If every pregnant woman would study the pamphlet on The Baby or some equally good publication, both the mother and her child would profit thereby.

NEW HAMPSHIRE MEDICAL SOCIETY

THE ONE HUNDRED AND FORTY-THIRD ANNUAL MEETING

Hotel Carpenter, Manchester, N. H.

Tuesday and Wednesday, May 15-16, 1934

ALL meetings will be called to order promptly at the stated hour — Standard Time.

The first meeting of the House of Delegates will be held Monday evening, May 14, at 7:30 o'clock, Hotel Carpenter, and subsequent meetings will be in the same place.

The Scientific Sessions will open promptly at 10:00 o'clock A.M., Tuesday, with General Meetings forenoon and afternoon, Tuesday and Wednesday.

Wednesday evening, May 16, Banquet 6:30 o'clock, Hotel Carpenter. Tickets, $1.50 each.

OFFICERS FOR 1933-1934

President

Robert J. Graves, Concord.

Vice-President

Frederic P. Lord, Hanover.

Secretary-Treasurer

Dennis E. Sullivan*, Concord.
Carleton R. Metcalf, pro tem, Concord.

*Deceased.

Councilors

	Term Expires
Arthur A. Pratte, Cheshire County	1934
Emery M. Fitch, Sullivan County	1934
Henry H. Amsden, Merrimack County	1935
Clarence O. Coburn, Hillsborough Co.	1935
Abram W. Mitchell, Rockingham Co.	1936
John A. Hunter, Strafford County	1936
Richard E. Wilder, Coos County	1937
Charles E. Smith, Carroll County	1937
Clifton S. Abbott, Belknap County	1938
Arthur T. Downing, Grafton County	1938

Trustees

Thomas W. Luce, Portsmouth	1934
Alpha H. Harriman, Laconia	1935
Henry O. Smith, Hudson	1936

HOUSE OF DELEGATES

The President, ex-officio.
The Vice-President, ex-officio.
The Secretary-Treasurer, ex-officio.

Rockingham County

Arthur M. Fernald, Hampton.
Eugene A. Vickery, Portsmouth.
Cleon W. Colby, Exeter.

Merrimack County

Charles H. Parsons, Concord.
Clarence E. Butterfield, Concord.
James B. Woodman, Franklin.

Cheshire County

Osmon H. Hubbard, Keene.
Arthur W. Hopkins, West Swanzey.

Grafton County

Kenneth Churchill, Lebanon.
Elmer M. Miller, Woodsville.

Sullivan County

John H. Munro, Sunapee.
Henry C. Sanders, Jr., Claremont.

Hillsborough County

Joseph E. Larochelle, Manchester.
Roland J. Joyce, Nashua.
Byron D. Pease, Greenville.
Deering G. Smith, Nashua.
George C. Wilkins, Manchester.

Belknap County

Richard W. Robinson, Laconia.
John R. Perley, Laconia.

Carroll County

William J. P. Dye, Wolfeboro.
Charles E. Smith, Conway.

Strafford County

George C. Rublee, Rochester.
Harry O. Chesley, Dover.

Coos County

William H. Leith,* Lancaster
Joseph J. Cobb, Berlin.

*Deceased.

HOUSE OF DELEGATES

MONDAY, MAY 14, 7:30 P.M.

Hotel Carpenter

Speaker, Carleton R. Metcalf, Concord.
Vice-Speaker, Henry C. Sanders, Jr., Claremont.

Order of Business

Subject to Approval of the House.

Roll Call.
Minutes of last meeting.
Appointment of Committees.
Reports of Officers.
Reports of Standing and Special Committees.
New Business.
Report of Committee on Nominations. (First business of second day.)
Election of Officers.
New Business.
Unfinished Business.

STANDING COMMITTEES

Scientific Work

Dennis E. Sullivan*, Richard W. Robinson, Frederick P. Scribner.

Public Relations, Public Policy and Legislation

Samuel T. Ladd, Harry O. Chesley, Charles Duncan, the President, the Secretary-Treasurer.

Publication

Dennis E. Sullivan*, Benjamin P. Burpee, Lawrence R. Hazzard.

Tuberculosis

Robert B. Kerr, Robert W. Deming, Arthur L. Wallace.

Mental and Social Hygiene

Charles A. Weaver, Benjamin W. Baker, Charles H. Dolloff.

Control of Cancer

George C. Wilkins, Howard N. Kingsford, George F. Dwinell.

Lay Health Organizations

Robert B. Kerr (1934), Eugene B. Eastman* (1935), Carleton R. Metcalf (1936), Emery M. Fitch (1937), Ezra A. Jones (1938).

Medical Education and Hospitals

Robert J. Graves (1934), John P. Bowler (1935), Deering G. Smith (1936).

Advisory Committee on Jurisprudence

Thomas W. Luce, Rockingham County; Robert J. Graves, Merrimack County; Osmon H. Hubbard, Cheshire County; Fred E. Clow, Carroll County; Arthur T. Downing, Grafton County; Henry C. Sanders, Jr., Sullivan County; David W. Parker, Hillsborough County; Clifton S. Abbott, Belknap County; Louis W. Flanders, Strafford County; William H. Leith*, Coos County; Dennis E. Sullivan*, Concord, Chairman.

Amendments to Constitution and By-Laws

Henry O. Smith, Fred E. Clow, Thomas W. Luce.

New England Medical Council

Robert J. Graves, President; Dennis E. Sullivan*, Secretary-Treasurer; Frederic P. Lord (1934); Thomas W. Luce (1935); David W. Parker (1936).

*Deceased.

ANNOUNCEMENTS

All meetings will begin promptly. Standard Time.

Every member is requested to register and receive a badge before entering the General Assembly Hall. Please present your membership certificate when registering.

During the discussion of papers, the speakers will please announce their names plainly for the benefit of the stenographer, and then walk forward to the platform so that the audience and the stenographer may plainly hear what is said.

Discussion of papers is open to all members and guests of the Society. It is not limited to those named on the program.

Ladies of visiting members are cordially invited to visit Manchester during the state meeting and are urged to attend the entertainment on Tuesday evening and the banquet on Wednesday evening.

Members of the resident Ladies Committee will be in attendance at headquarters to render such services as may be desired by the visiting ladies.

As heretofore, the usual exhibition of x-ray apparatus, books, surgical appliances, drugs and foods will be held. Application for space should be made to Dr. George F. Dwinell, Manchester.

GENERAL MEETING

TUESDAY, MAY 15, 10 A.M. S.T.

Call to order by the President, Robert J. Graves, Concord.

Invocation, Rev. Erville B. Maynard, Rector Grace Episcopal Church, Manchester.

Address of Welcome, The Mayor, Damase Caron, M.D.

Report of Committee on Arrangements, Howard A. Streeter, Chairman, Manchester.

Prolapse of Uterus During Pregnancy. Donald E. Higgins, Epping.

Discussion opened by Donald W. Leonard, Physician Phillips Exeter Academy, Exeter.

Original motion pictures of an operation performed for this condition.

John F. Holmes, Manchester; Abram W. Mitchell, Epping.

Report of a Case of Phenobarbital Poisoning. Bernard P. Haubrich, Claremont.

Discussion opened by Henry C. Sanders, Jr., Claremont; Charles F. Keeley, Claremont.

Bone Tumors with Report of Two Cases of Benign Giant Cell Tumor and Their Treatment. Herbert L. Taylor, Portsmouth.

Discussion opened by Ezra A. Jones, Manchester; Samuel T. Ladd, Portsmouth.

TUESDAY, MAY 15, 2 P.M. S.T.

Presentation of 50-year Membership Gold Medal to Leonard Jarvis, Claremont; George E. Leete, Concord.

The President's Address, Robert J. Graves, Concord.

SYMPOSIUM ON PULMONARY TUBERCULOSIS

Medical Aspect — Robert Deming, Glencliff Sanatorium; S. A. Petroff, Saranac Lake, New York.

Surgical Aspect — Richard Overholt, Lahey Clinic, Boston, Mass.

Roentgenological Aspect — Adelbert S. Merrill, Manchester.

Open discussion.

TUESDAY EVENING, MAY 15, 8:00 P.M. S.T.

SOCIAL EVENING

Details will be announced at Morning Session.

WEDNESDAY, MAY 16, 10:00 A.M. S.T.

Reception of Visiting Delegates.

Friedman's Modification of the Aschheim-Zondek Test for Pregnancy. Joseph N. Friborg, Manchester.

Discussion opened by Benjamin P. Burpee, Manchester; Lyall A. Middleton, Plymouth.

Pernicious Anemia. William P. Murphy, Boston, Mass.

Discussion opened by Joseph D. Shields, Concord; Clarence O. Coburn, Manchester.

Address, Dean Lewis, Baltimore, Maryland, President, American Medical Association.

WEDNESDAY, MAY 16, 2:00 P.M. S.T.

Introduction of new President.

What is Wrong with the Patient Who Feels Tired, Weak and Toxic? Walter C. Alvarez, Mayo Clinic, Rochester, Minnesota.

Discussion opened by John P. Bowler, Hanover; Daniel C. Norton, Manchester.

Diagnosis and Treatment of Breast Cancer. Frank E. Adair, Memorial Hospital, New York City.

Discussion opened by George C. Wilkins, Manchester; John F. Gile, Hanover.

Report of House of Delegates.
Report of Trustees.
Installation of Officers.

WEDNESDAY EVENING, MAY 16, 6:30 P.M. S.T.

THE BANQUET

James J. Powers, Manchester, Anniversary Chairman.

Guest speakers of prominence will be announced later.

COMMITTEE ON ARRANGEMENTS

General Chairman — Howard A. Streeter.

SUB-COMMITTEES

Location — Alexandre Barbeau.
Program — Daniel J. Sullivan.
Reception — George V. Fiske.
Banquet and Entertainment — W. A. Bartlett.
Exhibition — George F. Dwinell.
Finance — Elmer J. Brown.
Publicity — Murray H. Towle.
Hospital — Damase Caron.

List of Commercial Exhibitors at the time of going to press.

Elmer N. Blackwell, Portland, Maine.
Boss and Seiffert Co., Providence, R. I.
The Chelmsford Ginger Ale Co., Inc., Chelmsford, Mass.
Crossett Shoe Co., Augusta, Maine.
Davies, Rose & Co., Ltd., Boston, Mass.
George C. Frye Co., Portland, Maine.
General Electric X-ray Corporation, Boston, Mass.
General Ice Cream Co., Manchester.
H. P. Hood & Sons, Manchester.
Lederle Laboratories, Inc., New York, N. Y.
E. F. Mahady Co., Boston, Mass.
Mead-Johnson & Co., Evansville, Ind.
Mellin's Food Co., Boston, Mass.
The P. J. Noyes Co., Lancaster.
The E. L. Patch Co., Boston, Mass.
R. J. Strasenburgh Co., Pharmaceutical Chemists, Rochester, N. Y.
Surgeons' and Physicians' Supply Co., Boston, Mass.
Tailby-Nason Company, Boston, Mass.

CASE RECORDS
of the
MASSACHUSETTS GENERAL HOSPITAL

ANTE MORTEM AND POST MORTEM RECORDS AS USED IN WEEKLY CLINICAL-PATHOLOGIC EXERCISES

EDITED BY RICHARD C. CABOT, M.D.
F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 20181

PRESENTATION OF CASE

A sixty-seven year old American widow entered the Massachusetts Eye and Ear Infirmary for treatment of a cataract in the right eye.

Eighteen years before admission while in San Francisco she was found to have sugar in her urine and a blood pressure of 190. Since that time she had been on a slightly restricted diet. She tested her urine about once a week and found the reaction was usually green, rarely blue, and not infrequently red. Twenty-one months before admission she was awakened one night with severe vertigo. She got up for a short while but returned to bed on her hands and knees, still very dizzy. The next day she could not get up because of these symptoms. Her physician gave her several injections of insulin. Her blood pressure at that time was 260. She was in bed for about three weeks during that episode, but had no further recurrence. A few months after this attack an ulcer appeared on her right great toe. One year before admission she had a cataract removed from her left eye.

Family history. Her mother died of pneumonia, her father of heart disease at the age of seventy-two. There was no history of tuberculosis, cancer or diabetes.

Marital history. She was married twenty years before entry. Her husband died three years later from ulcers of the stomach. She had never been pregnant.

At the Eye and Ear Infirmary a cataract was removed from her right eye. She did well until the fourth day after operation, when she began to vomit, complain of thirst, and become very restless. A medical consultant found that she was dehydrated, had an acetone breath and appeared on the verge of coma. Her urine showed a brown test for sugar. Two preceding tests had been negative. She was given a clysis and put on insulin by test. On the fifth postoperative day she complained of some pain in her left chest. Her temperature rose to 100.4° and on the following day râles were found at the left base. Her blood pressure was 220/110 on admission to the Infirmary.

On the sixth day she was transferred to the Massachusetts General Hospital.

Physical examination showed a well developed and nourished woman lying in bed, moderately orthopneic. The skin was dry. There was an eye shield over the right eye. The left eye showed the result of an old cataract operation. The mouth and tongue were dry. The thoracic expansion was limited because of inspiratory pain over the precordium and the left axilla. Over the lower half of the left chest and in the axilla there was a fairly definite coarse friction rub. There were also many coarse râles. There was no dullness or change in whispered and spoken voice. The abdomen was moderately distended and tympanitic. The liver was felt two fingerbreadths down. The heart was not enlarged to percussion. The sounds were weak and regular. No murmurs were heard. The blood pressure was 140/90.

The temperature was 103°, the pulse 118, the respiratory rate 32.

Examination of the urine showed a large trace of albumin, a green test for sugar, and no acetone. Examination of the blood showed a red cell count of 5,800,000 with a hemoglobin of 70 per cent and a white cell count of 24,900, with 88 per cent polymorphonuclears. The fasting blood sugar was 133 milligrams, the carbon dioxide combining power 52.5 volumes per cent.

For the first few days her general condition improved slightly and the temperature went down to 101°. She was uncoöperative however and required large amounts of sedatives. On the fourth day in the Massachusetts General Hospital her condition became definitely worse. She was mentally confused, screamed, moaned, groaned, twisted, and tried to get out of bed almost constantly. She fell out of bed on one occasion without apparent damage. There were moist râles up to the midscapular region on both sides, more marked on the left. The urine tests were blue for the most part, with an occasional green test. On the fifth day she was observed to have complete left hemiplegia. She was conscious but was unable to speak. On the sixth day her pulse and respirations were considerably elevated. She became comatose and died on the following day, eleven days after operation.

DIFFERENTIAL DIAGNOSIS

DR. DWIGHT L. SISCOE: This seems to me a very complicated and very difficult situation. I approach it with a little more temerity perhaps because of the difficulties of pathologist and clinicians in the last case.

Here is a sixty-seven year old widow who we are told had hypertension and diabetes of eighteen years' duration, both of which statements we have to accept at their face value. She came to the Eye and Ear Infirmary for a cataract operation. It was done and nothing happened until four days later, when she developed pain in the left chest and had some difficulty with

sugar in the urine. She was transferred to the Massachusetts General Hospital, where temperature developed and later she died with symptoms which suggest a cerebral accident of some sort.

Of course the interesting thing to me was that twenty-one months before admission she had an attack of vertigo, apparently a very severe one, obliging her to go back to bed on her hands and knees and necessitating staying in bed for three weeks. The most logical assumption would be vascular arteriosclerosis associated with hypertension. I think she probably had more or less arteriosclerosis, because a diabetic of eighteen years' standing would be likely to have arteriosclerosis. Lues must be considered as a cause of the vertigo. The fact that she had diabetes makes us wonder if she had a hypoglycemic reaction. She had not taken insulin before. I have never seen hyperglycemia per se cause vertigo. I think the fact that the doctor gave her insulin following this attack does not necessarily mean that hyperglycemia caused the vertigo. Of course alcohol or nicotine causes vertigo, although we have had no information about either of these. Her blood pressure was said to be 260. I believe we are perfectly justified in assuming that this vertigo is vascular and hypertensive in type.

When she was taken to the Eye and Ear Infirmary for operation on the cataract we have no statement about her cardiorenal vascular system other than that she had a blood pressure of 220/110. I think the cataract was not connected in any way with the vascular system, because she went along very comfortably until the fourth day. I am assuming it to be a senile cataract. It may possibly have been a diabetic one.

On the fourth day she began to vomit and complain of thirst and became very restless. In the presence of a statement of diabetes, vomiting, thirst, and later dehydration and acetone breath, of course diabetic acidosis would be the first consideration. On the other hand there are other possibilities in that syndrome. Those symptoms may be related to intracranial pressure of some sort, or possibly to an infection. The onset of infection, especially septicemia, might cause such a syndrome. Perhaps dehydration alone would do it. On the whole I am inclined to interpret this as due to diabetic acidosis, although we have no carbon dioxide figures at that time.

Then we come to what was to me the chief stumbling block in this case, pain in the left chest. We are not told about the character of the onset of this pain. I do not know how persistent it was. One immediately thinks of all of the things that might cause pain in the chest, and of course pleurisy and pneumonia are outstanding for this. Pulmonary or coronary infarction may cause pain in the chest, but it seems to me that a friction rub in the left chest of the type described is less likely to be due to a coronary accident than to pulmonary infarct. We are told later that the temperature was 103°, the pulse 116, and the respirations 32. I interpret those figures as being too high for ordinary pleurisy. We are also told that she did not have dullness, or change in the breath sounds, or evidence of pneumonia.

The blood pressure at the Eye and Ear Infirmary was 220/110. We are now told that after the pain had been present for two or three days the blood pressure was 140/90 and the heart sounds were very weak but regular. Of course this leads us to a point much more favorable to coronary thrombosis than to pulmonary infarct. I really do not know. I am inclined to feel on the whole that it is coronary infarct rather than pulmonary infarct.

This rub in the left chest was described as a very coarse rub. How persistent was it?

DR. ALFRED L. DUNCOMBE: It was there all that evening. The following morning it was gone.

DR. SISCOE: At this point the urine showed a very large trace of albumin, a green test for sugar, and no diacetic acid. The blood sugar was 133 milligrams, the carbon dioxide combining power 52 volumes per cent. On these figures we can rule out diabetic coma and acidosis. She had a red blood cell count of 5,800,000. That may mean polycythemia, but I interpret it as being due to dehydration. The white cell count of 24,900 with 88 per cent polymorphonuclears suggests infection very strongly to me. It is unusually high for coronary thrombosis. It would be more compatible with pulmonary infarction.

This next thing I am very much interested in, the shield over the right eye. I should like to ask if there was any evidence of local infection in the operative field.

DR. DUNCOMBE: We did not remove that, but the house officer from the Eye and Ear Infirmary came over and said the eye was in good condition.

DR. SISCOE: I am also told a little farther back that she had an ulcer on the left great toe; the statement stops there. In a patient with diabetes an ulcer on the toe is of rather major importance. If it was simple uninfected ulcer on the toe it would not be fair to assume septicemia from a gangrenous toe.

DR. DUNCOMBE: It was a very superficial ulcer that healed up.

DR. SISCOE: In that case we may disregard it.

She required a large amount of sedatives. "She was mentally confused, screamed, moaned, groaned, twisted, and tried to get out of bed almost constantly." Those things suggest several possibilities, cerebral irritation for one

thing, perhaps uremia, perhaps septicemia. I find it very difficult to know which to say. Those symptoms were followed by falling out of bed, and the morning after that by complete hemiplegia. One wonders if she injured her head and skull in falling out of bed. That might have caused a cerebral hemorrhage or have ruptured a vessel or an aneurysm that might have been there from an old luetic lesion. I do not know.

The urine test was still blue and the diabetes was definitely controlled, so that I think we have no diabetic problem here. I feel that although this woman died in coma, it was not diabetic coma, or in my opinion uremic coma. We are not told the non-protein nitrogen figure. On the whole I feel that her comatose condition at the time of death, with left hemiplegia, was associated with cerebral hemorrhage, possibly preceded by a thrombus or an embolus which may have come from a coronary infarct with thrombosis.

The other diagnoses are of course diabetes, which I accept at its face value. She had a cataract, and hypertension of at least eighteen years' duration. It might have been essential in type. Coming on at forty-eight years of age with the diabetes and obviously arteriosclerosis, I think it was more probably not essential in type.

I cannot escape the feeling that this woman had a definite infection, possibly streptococcus septicemia, perhaps only an infection following a coronary or pulmonary infarct.

DR. TRACY B. MALLORY: Have you anything to add, Dr. Brailey?

DR. ALLEN G. BRAILEY: I saw her during one day in the Eye and Ear Infirmary. It was perfectly evident that she was mildly psychoneurotic. In regard to the cerebral symptoms, she had always been an extremely difficult patient. When she was there four years earlier she rushed about the ward and was extremely temperamental. The following morning she had a clysis, fluids and orange juice, and was straightened out. The following day she had pleurisy in her left axilla, not very severe, a few râles, a little fever, and a fall in blood pressure. As I remember, her blood pressure was not over 200 and she had a drop to 150, and I am afraid I passed it off as a drop in blood pressure due to rest and sedatives. I thought she had infarct of the lung or pneumonia when I sent her to the Massachusetts General Hospital.

CLINICAL DIAGNOSES

Cerebral hemorrhage from arteriosclerosis.
Hypertension.
Diabetes.

ANATOMIC DIAGNOSES

Thrombosis of the right circumflex coronary artery.
Cardiac infarction with perforation of aneurysm, left ventricle.
Hemopericardium.
Cardiac hypertrophy.
Occlusion of right middle cerebral artery (embolism? thrombosis?).
Cerebral infarct, recent.
Cerebellar infarct, old.
Hydrothorax, bilateral.
Pulmonary fibrosis, right, middle.
Chronic pleuropericarditis, right middle lobe.
Arteriosclerosis: marked coronary; slight aortic and renal; cerebral.
Perihepatitis.
Perisplenitis.
Cyst of parathyroid.
Obesity.

PATHOLOGIC DISCUSSION

DR. MALLORY: The autopsy showed a very large infarct of the heart which was due to closure of the right coronary rather than the left. In the central portion of the infarct was a definite aneurysmal bulge, and evidently as the final terminal event this cardiac aneurysm had ruptured; she had 300 cubic centimeters of blood in her pericardial cavity. Overlying the infarct in the heart was a thrombus, and presumably from this a small plug had broken off and filled the middle cerebral artery, so there was a large area of softening of the brain.

It is rather difficult to guess at time factors. She must have had the infarct and the aneurysm for a considerable length of time, obviously long before the operation for cataract, and I should imagine that the rupture of the heart was terminal, probably subsequent even to the cerebral embolus. I can hardly imagine she could live very long with that amount of blood in the pericardium.

DR. SISCOE: Did you find any evidence of lues in the aorta?

DR. MALLORY: No. There was nothing definite there.

DR. CHARLES S. KUBIK: There was also an infarct of the cerebellum, which probably accounts for the vertigo a year and a half or so before her death.

CASE 20182

PRESENTATION OF CASE

This is the case of a forty-four year old Negro steward. Seven years before admission he was refused a life insurance policy because of hypertension. About this time he began to have very severe headaches, usually in the morning. Five years before entry he first noticed dyspnea on exertion and felt generally run down. His appetite remained good and he lost no weight. Two years before admission the dyspnea increased considerably and he was forced to use two or three pillows at night. Occasionally he was awakened at night by asthmatic attacks which lasted fifteen to thirty minutes. He noted that his feet were frequently swollen. He attributed this to his work, which kept him on his feet. A year before entry he was obliged to give up his work because of weakness and dyspnea, and at this time he noticed failing vi-

sion. Four months before entry following an argument he was found lying on the floor unconscious. He was taken to a hospital, where he stayed about a week with some improvement. Following this he stayed at home, in bed most of the time and having asthmatic attacks almost every night. He had no precordial pain, but during the attacks he felt a gripping or squeezing sensation in his chest. For the past four months his eyelids had been puffy, his vision had become progressively worse and he had had increasing frequency, eight to ten times during the day and six to eight times at night. There was no dysuria, hematuria or pyuria, but he passed large amounts of pale clear urine. On the afternoon before admission he was found lying on the floor in a stupor. Since that time he had been unable to speak or move his right side. He remained conscious however.

His father died of heart trouble at the age of fifty-two. His mother, who was a diabetic, was living. One sister died after a miscarriage. Two sisters died in infancy, and another sister, forty years old, was living but had hypertension and had had a shock four years before the patient's entry.

The patient had been married fifteen years. His wife was living and well. She had had no pregnancies.

Physical examination showed a well nourished, drowsy man. The pupils were small and did not react. The eyegrounds showed some blurring of the disk margins, with many white patches and very definite arteriovenous nicking. The heart was enlarged. The left border of dullness was 13.5 centimeters from midsternum. There were occasional extrasystoles and a systolic murmur at the apex. The aortic second and pulmonic second sounds were loud. The blood pressure was 250/170. The peripheral vessels showed marked arteriosclerosis. The right side of his body was spastic, with increased reflexes. There was a lower right facial weakness. Babinski was positive on the right. There were a few râles and signs of some fluid at the right base.

The temperature was 99.2°, the pulse 80, the respiratory rate 20.

The examination of the urine showed a specific gravity of 1.018, a trace of albumin, and four or five white blood cells per high power field. Examination of the blood showed a red cell count of 4,600,000, with a hemoglobin of 80 per cent, and a white cell count of 12,700 with 79 per cent polymorphonuclears. The stools were negative. A Hinton test was negative. The non-protein nitrogen was 50 milligrams.

An electrocardiogram showed one premature ventricular beat interrupting a regular rhythm with a rate of 90. There was considerable left axis deviation, diphasic T_1, notched P_1 and P_2 and diphasic P_3.

He was given a light diet and plenty of sedatives. The day following admission examination showed flaccid paralysis of the right arm and right face and deviation of the tongue to the right. He was aphasic, but managed to mumble a few words. On the fourth day his breathing became more labored and markedly Cheyne-Stokes in character. More râles developed at the right base. His temperature rose gradually. The white blood cell count on the sixth day was 19,800. Venesection was done, with withdrawal of 450 cubic centimeters. On the seventh day the temperature rose to 103.4°, the pulse to 118 and the respirations to 36. He became comatose and died that day.

Differential Diagnosis

Dr. Maurice Fremont-Smith: In a man of forty-four, a Negro, we think first of syphilis as a possible cause of cardiac failure. It is a little young for the hypertensive heart to fail and a little old for the first failure in a rheumatic. On the other hand, here we have evidence of hypertension, and hypertension of long duration. We need no other explanation for the cardiac failure.

We find also the evidence of a vascular intracranial accident, a lesion on the left side, probably in the region of the internal capsule, and again we have I think sufficient reason for that lesion in his hypertension, in his arteriosclerosis.

It seems rather odd that he should have had so much difficulty in vision. It is possible that he may have had a tumor on the left side, but there is no definite evidence for tumor. I think we shall find a thrombosis rather than a hemorrhage, because the condition did not come on entirely suddenly. There was some warning. The man was unconscious once four months before he came in, and the onset of the present condition was rather gradual.

I do not understand the statement that there was a flaccid paralysis on the right. Sometimes with an acute cerebral accident we get a flaccid paralysis due to shock and later on the reflexes increase and we get a typical spastic paralysis of central origin. A flaccid paralysis must be due either to an overwhelming central nervous shock or else to a peripheral nerve lesion.

There is no evidence here of actual kidney failure. There is evidence of kidney dysfunction, in that the nocturia increased and he had a slight rise in his non-protein nitrogen, but nothing that could not be due primarily to sclerotic kidneys.

The death was cardiac, with pneumonia probably, and the chief cause cerebral hemorrhage or thrombosis.

Clinical Diagnoses

Hypertension (essential).
Hypertensive heart disease.
Chronic vascular nephritis.
Mild congestive failure.
Cerebral vascular accident with right hemiplegia.
Bronchopneumonia.

ANATOMIC DIAGNOSES

Cerebral hemorrhage.
Arteriosclerosis, moderate cerebral, coronary, renal and aortic.
Cardiac hypertrophy and dilatation, hypertensive type.
Pulmonary infarction.
Bronchopneumonia.
Chronic vascular nephritis.
Duplication of descending branch of left coronary.
Thyroid involution and hyperinvolution.

PATHOLOGIC DISCUSSION

DR. TRACY B. MALLORY: The autopsy on this man showed a markedly enlarged heart weighing 825 grams, a moderate amount of arteriosclerosis not only in his larger vessels but a very diffuse arteriolar sclerosis of all the smaller ones, with the kidneys very extensively involved; the pancreas, the adrenals, and the other organs involved in their usual proportions under these conditions.

There was no anatomic evidence of syphilis. The aortic valve was perfectly competent and sections of the aorta showed no evidence of aortitis.

The cerebral findings Dr. Kubik will tell us.

DR. CHARLES S. KUBIK: I should think Dr. Fremont-Smith was perfectly justified in suspecting thrombosis, but here again we have a hemorrhage, which in this case is situated in the left ventricular nucleus. Judging by the history and the clinical course I should be inclined to suspect that the hemorrhage was not so large as this to begin with, that the process may very well have started with thrombosis and that the hemorrhage occurred as a result of the consequent necrosis.

The main cerebral arteries are very sclerotic and many of the smaller arteries within the brain are also sclerotic. Microscopic sections reveal only a moderate degree of arteriosclerosis.

DR. MALLORY: In the great majority of these hypertensive cases one finds several to many areas of softening based on thrombosis of the small vessels. The astonishing thing is the number of areas and the fairly significant size anatomically when nothing whatever in the past history would lead one to suspect them.

DR. KUBIK: The patient had an apoplectic attack some time before his final illness. It is possible that the lesion which caused it is covered up by the hemorrhage. There is a tiny infarct of the opposite lenticular nucleus.

DR. JAMES B. AYER: I wonder if it was flaccid paralysis, because first they said right spastic paralysis, later flaccid. Dr. Putnam and I were just talking about a case he had just seen which seems to fit in with Fulton's idea: if a lesion is localized in the motor cortex you get a flaccid paralysis; if it spreads to the premotor cortex it becomes spastic. I wonder if the observation was correct in that they speak of its being spastic before.

DR. FRANK B. CUTTS: As I remember it, he was definitely flaccid on the right side and he did become spastic later.

DR. HENRY R. VIETS: The question of flaccidity and spasticity is interesting from the experimental point of view, as there has now been gathered together a good deal of evidence that the so-called motor cortex, the origin of the large Betz cells, is the origin of fibers passing down through the internal capsule and to the spinal cord. Paralysis, however, of this system always leads to a flaccid state and never to a spastic condition. It is only when the nerve fibers from the area in front of the motor area, now designated as the premotor area, which does not contain Betz cells, are interrupted that we have spasticity as a sign of dysfunction. This area contains large motor cells, but not the giant cells first described by Betz. As the cerebral cortex is investigated more and more, both experimentally by using the primates and by electrical stimulation of human beings at operations under local anesthesia, it has been observed that the motor cortex is very much less in extent on the surface of the brain than was formerly considered. Most of it lies deep in the Rolandic fissure and only two small areas are to be found on the pre-Rolandic gyrus. The whole pre-Rolandic area, therefore, is largely made up of the premotor cortex, which is very different histologically from the motor cortex itself.

The above points have come to me largely from Dr. Fulton's physiological laboratory at New Haven. As the result of his work on the primates he has convinced me that it is only when lesions invade or replace the premotor cortex that spasticity occurs. There are also other signs that go along with a lesion of the premotor cortex, so that a syndrome has been suggested, grouping a number of clinical signs together. These consist of loss of skilled movements, slight spasticity, vasomotor changes, and often forced grasping. The whole question of flaccidity and spasticity is being discussed enthusiastically in neurological circles and it is one of considerable importance.

DR. J. H. MEANS: Dr. Mallory, can you tell us anything about the venesection, whether it was really indicated or contraindicated? He actually had a hemorrhage, and I suppose that theoretically venesection ought to help that, but it is always a most difficult decision to make.

DR. MALLORY: There is one point that occurs to me. Nearly all of these cases of sudden cerebral accident have an extreme degree of pulmonary congestion and edema. It is so marked that Dr. Norris in New York is said to walk into the autopsy room and look at the lungs and say "That is a cerebral lung" with a very high percentage of accuracy. Venesection might at least tend to relieve that, although it probably would not have very much effect on the cerebral lesion.

The New England
Journal of Medicine
SUCCESSOR TO
THE BOSTON MEDICAL AND SURGICAL JOURNAL
Established in 1828

Published by THE MASSACHUSETTS MEDICAL SOCIETY under the jurisdiction of the

COMMITTEE ON PUBLICATIONS
R. I. LEE, M.D., *Chairman* HOMER GAGE, M.D.
R. B. OSGOOD, M.D. R. M. SMITH, M.D.
F. H. LAHEY, M.D.

EDITORIAL STAFF
REID HUNT, M.D. STEPHEN RUSHMORE, M.D.
JOHN P. SUTHERLAND, M.D. HANS ZINSSER, M.D.
GEORGE R. MINOT, M.D. BENJAMIN WHITE, PH.D.
FRANK H. LAHEY, M.D. HENRY R. VIETS, M.D.
SHIELDS WARREN, M.D. ROBERT N. NYE, M.D.
GEORGE L. TOBEY, JR., M.D. ROBERT M. GREEN, M.D.
C. GUY LANE, M.D. CHARLES C. LUND, M.D.
WILLIAM A. ROGERS, M.D.

WALTER P. BOWERS, M.D., *Managing Editor*

ASSOCIATE EDITORS
GEORGE G. SMITH, M.D. WILLIAM B. BREED, M.D.
JOSEPH GARLAND, M.D.

THE NEW HAMPSHIRE MEDICAL SOCIETY
PUBLICATION COMMITTEE
D. E. SULLIVAN, M.D.* BENJAMIN P. BURPEE, M.D.
LAWRENCE HAZZARD, M.D.
*Deceased.

THE VERMONT STATE MEDICAL SOCIETY
PUBLICATION COMMITTEE
WILLIAM G. RICKER, M.D. C. F. DALTON, M.D.
E. A. STANLEY, M.D.

SUBSCRIPTION TERMS: *$6.00 per year in advance, postage paid for the United States, Canada $7.04 per year, $8.52 per year for all foreign countries belonging to the Postal Union.*

Material for early publication should be received not later than noon on Saturday. Orders for reprints must be sent to the Journal office, 8 The Fenway.

The Journal does not hold itself responsible for statements made by any contributor.

Communications should be addressed to The New England Journal of Medicine, 8 The Fenway, Boston, Mass.

NERVE-PROCESS VERSUS MIND-PROCESS

THANKS to the closely interwoven researches in neurophysiology of Sir Charles Sherrington and his coworkers at Oxford there has grown up a great body of facts in relation to nerves and their physiological functions, particularly their influence on the musculature of the body. From this point of view the brain is, also, part of "one originally uniform nerve-organ with for its main primeval office the management of those muscles, often still called the muscles of external relation". The mechanism consists of two opposing processes, excitation and inhibition, both coöperating at nodal points in the nerve circuit. As Sherrington expresses it: "Their joint operation at any moment settles what will be the conduction pattern, and so the motor outcome, of the signalling going forward in the brain." Such a meagre outline naturally gives little idea of the perfection of performance the reflex machinery can reach. We know, however, something of the strength, the speed, the direction and the steadiness of motor acts. There is also, except for the simplest reflex, a great flexibility of result. A slight difference in stimulus changes the result to one adapted to the new stimulus. Even more significant, the same stimulus can from occasion to occasion call forth different results, even amounting to actual reversal.

These and other details are carefully summarized in Professor Sherrington's Rede lecture, delivered before the University of Cambridge, England, in December 1933*. When we turn, however, from an actual nerve-process to a mind-process, we reach a new field. Often the connection between the two cannot be understood for want of a common intelligible link. We may by pragmatic common sense disregard this difficulty, although we have no starting point for analysis of mental function. "The relation of mind to brain," to quote Sherrington again, "is not merely unsolved but still devoid of a basis for its very beginning. I am not a defeatist, for I would urge active pursuit of the enquiry. Even on the old line of deciphering principles of action of the brain in its management of muscle in the hope of clues to its ways of working in regard to mind. Not that any reflex principle seems applicable to mental activity. The reflex implies an end-result at which the nerve-process having shot its bolt stops and goes no further. But attempted correlation of mind with brain activity indicates for the latter through-line processes which are in no sense end-effects at all. Nevertheless, there are broad analogies. May we not think that anyhow there is no transmission from a, so to say, mental power-head, but a subtle spread of action over an unstable train, its strength at any point resting on the stability at that point. A ghost may be a very weak visual stimulus and yet release a large mental reaction."

The problem, however, is not entirely without hope, for one can hardly escape the inference that nerve inhibition must be a large factor in the working of the mind. The definite limits of exploration are not yet attained. The problem "will long offer to those who pursue it the comfort that to journey is better than to arrive; but that comfort assumes arrival". If man should arrive at an understanding of brain thinking, he "will certainly attempt to improve its ways of doing so, restraining some parts, amplifying others, introducing short-cuts, and, certainly, increasing speed and aiming at economy and devising as seems to him best". Such is the aim of the neurophysiologist.

*Sherrington, Sir Charles. The Brain and Its Mechanism. Cambridge: The University Press; New York: The Macmillan Co., 1933. p. 98.

THE BULLETIN OF THE AMERICAN SOCIETY FOR THE CONTROL OF CANCER

THE letter published in another column, from the Chairman of the Massachusetts Committee for the Control of Cancer, calls attention to the *Bulletin* of this Society, and its value and interest to physicians interested in Cancer. The work of the American Society for the Control of Cancer, is recognized in this country and abroad as having been one of the most effective agents in the education of the public in regard to this disease. The slow but steady improvement which has occurred in the results of treatment in the past twenty years is, in the opinion of many competent observers, due in no small part to the education of the public, which has dispelled many false ideas about Cancer and has made people aware of the importance of early diagnosis and prompt and effective treatment in obtaining a cure of the disease. Much more remains to be done, of course, along these lines, not only with the public, but with the medical profession as well; and the information contained in the *Bulletin* of this Society cannot fail to be of value to every member of the medical profession.

Membership in the Society provides an opportunity to endorse the work of this important organization which should be recognized by all who may be able to contribute the required fee.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

COCHRANE, ROBERT C. B.S., M.D. Harvard University Medical School 1911. F.A.C.S. Surgeon-in-Chief, Second Surgical Service, Boston City Hospital. Member of Associate Staff, New England Deaconess, New England Baptist, and several other hospitals. Address: 319 Longwood Avenue, Boston, Massachusetts. Associated with him is

NOWAK, STANLEY J. G. M.D. Harvard University Medical School 1926. Assistant Director of the Surgical Research Laboratory, Boston City Hospital. Address: Boston City Hospital, Boston, Massachusetts. Their subject is "Acute Thyroiditis With Report of Ten Cases." Page 935.

SOWLES, HORACE K. A.B., M.D. Harvard University Medical School 1915. F.A.C.S. Chief Surgeon, Lawrence Memorial Hospital. Surgeon to Out-Patients, Massachusetts General Hospital. His subject is "Carcinoma of the Small Intestine." Page 942. Address: 279 Clarendon Street, Boston, Massachusetts.

TURNER, GEORGE GREY. M.B., M.S., F.R.C.S., M.D. University of Durham 1898. F.A.C.S. Professor of Surgery, University of Durham. Senior Honorary Surgeon, Royal Infirmary. Major, Royal Army Medical Corps. His subject is "Excision of the Thoracic Oesophagus for Carcinoma with Construction of an Extra-Thoracic Gullet." Page 947. Address: The Hawthorns, Osborne Road, Newcastle-upon-Tyne, England.

O'CONNOR, CORNELIUS T. A.B., M.D. Harvard University Medical School 1924. Visiting Gynecologist at St. Elizabeth's Hospital, Brighton, Massachusetts. His subject is "Cesarean Section. A Review of Four Hundred and Thirty-Six Cases." Page 948. Address: 476 Commonwealth Avenue, Boston, Massachusetts.

BRIGGS, L. VERNON. M.D. Medical College of Virginia 1899. President of the New England Society of Psychiatry. Chairman of Committee on Legal Aspects of Psychiatry. His subject is "The Prevention of Crime. The Gangster in the Making." Page 955. Address: 64 Beacon Street, Boston, Massachusetts.

ALLEN, EUGENE E. M.D. Tufts College Medical School 1929. Senior Physician Female Hospital, State Infirmary, Tewksbury, Massachusetts. His subject is "Atresia of the Cervix Associated with Hematometra." Page 959. Address: State Infirmary, Tewksbury, Massachusetts.

COTTON, FREDERIC JAY, M.D., and MORRISON, GORDON MACKAY, M.D. See page 817, issue of April 12, for records of authors. Their subject is "Ruptured Biceps Tendon: Repair." Page 960.

MASSACHUSETTS LEGISLATIVE NOTES

H. 755 was submitted to the Legislature on the petition of C. Ruggles Smith, Secretary of the Board of Trustees of the University of Massachusetts. The Middlesex College of Medicine and Surgery is affiliated with the University of Massachusetts.

Section 2 of this bill, H. 755, was designed to repeal that provision of the present law which permits the registration of diplomates of the National Board of Medical Examiners by the Massachusetts Board of Registration in Medicine without examination. The bill has been passed by the House of Representatives with Section 2 stricken out.

Unless other action is taken, the recognition of diplomates of the National Board remains with the Board of Registration in Medicine.

This function of state medical examination boards is operative in forty-one states of the Union.

The entire bill was killed in the Senate.

MISCELLANY

A GROUP OF SCIENTISTS WILL VISIT THE BELGIAN CONGO

Six scientists will visit the Belgian Congo for the purpose of studying tropical diseases.

The party consists of Dr. Richard P. Strong, the leader of the expedition, and the following-named persons: Dr. Joseph C. Bequaert, entomologist; Dr. Jack H. Sandground, helminthologist; Hendy E. Mallinckrodt, laboratory assistant and photographer; Stuyvesant Pierrepont, Jr., zoological assistant, and Byron L. Bennett, technician.

RESOLUTIONS ADOPTED UNANIMOUSLY BY THE EXECUTIVE COMMITTEE OF THE BOSTON HEALTH LEAGUE ON APRIL 26, 1934

The Executive Committee of the Boston Health League has the greatest confidence in the wisdom and ability of the members of the Survey Committee which recently made recommendations for curtailing the budget of the Health Department of the City of Boston. Without having seen the tentative budget presented by the Survey Committee, and not being in possession of all the information upon which the recommendations were based, the Executive Committee of the Health League is unable to discuss the recommendations specifically. Nevertheless, the Executive Committee believes

(1) That a permanent reorganization of the Health Department along modern lines as proposed by the Survey Committee should be undertaken.

(2) That much money could be saved by so doing without serious impairment of service.

(3) That any budgetry curtailment which may be decided upon for the Health Department should be based upon principles of effective public health administration.

(4) That a strong Advisory Council for the Health Department is essential.

SUFFOLK DISTRICT MEDICAL SOCIETY

Endorsement of the Report of the Survey Committee

At a meeting of the Suffolk District Medical Society held April 25, 1934, the report of the Survey Committee appointed by his Honor the Mayor of Boston, to make recommendations relating to the Budget of the Health Department of the City of Boston, was unanimously endorsed.

BLINDNESS DUE TO TRACHOMA

New York City, April 21—"Although trachoma is the principal cause of blindness throughout the world, this eye disease is well under control in the United States and is comparatively rare in our large cities," declared Lewis H. Carris, Managing Director of the National Society for the Prevention of Blindness, just before sailing for Europe with Mrs. Carris on the S.S. Caledonia at noon today. Mr. Carris and Dr. Park Lewis of Buffalo, N. Y., will represent the United States at the joint meeting of the International Association for Prevention of Blindness and the International Organization Against Trachoma in Paris on May 14.

"I am very happy to announce," said Mr. Carris, "that reports from the United States Public Health Service which have just reached us indicate a downward trend in the prevalence of trachoma in this country. The disease is reportable here, and for many years we have refused admission to immigrants showing symptoms of it. In the United States, trachoma is found mostly in the Ozark and Appalachian Mountain regions and among the Indian tribes of the southwest; poverty and unsanitary living conditions are important factors in its contraction and spread.

"The ravages of trachoma are horribly severe in China, India, Egypt and other countries of the Orient and the Near East. Even in countries with well-organized and extensive ophthalmic campaigns for the relief and cure of sufferers, it cannot be hoped that trachoma will be materially reduced until economic and general living conditions are improved and education in hygiene has developed sanitary living. This disease, the greatest single world cause of vision impairment and blindness, constitutes a serious challenge to all national and international health and public welfare agencies.

"The specific germ which brings on trachoma has not been definitely established; recent investigations, however, furnish clues that are expected to clear up this mystery which has baffled medical men for centuries. Great progress has been made through the research of Dr. P. K. Olitsky and the late Dr. Hideyo Noguchi of the Rockefeller Institute laboratories in New York City."

Mr. Carris has directed the movement for the conservation of vision in America during the last twelve years. He is also the American Correspondent of the International Association for Prevention of Blindness which he and Dr. Lewis assisted in forming at The Hague in 1929. Dr. Lewis is Vice-President of both the American Society and the International Association for Prevention of Blindness.

PHYSICIANS' ART SOCIETY OF BOSTON

There is a very interesting exhibit of painting, sculpture, and crafts by doctors, now in its second week at the Boston Medical Library.

There is a queer logic about avocations. Doctors as golfers do not excel as a rule, but it is no news that physicians, weary of people and of talk, turn to pursuit of the silent fish. No sadism in this or satiety of talk.

And so the doctor skilled in observation, skilled in varied forms of manipulative technique learns a new technique, that of the silent hands,—goes back, may one say, from the talkies to the voiceless drama.

And so have a group of our colleagues done. A small, peculiar, definitely interesting exhibit has

been assembled. There are now, as you may reckon them, three or four art shows in Boston, and as to *interest* this one ranks high.

Obviously, necessarily, it includes some things that could be more expertly done technically, but even the technique is surprisingly good, often admirable.

And we have here the output of men who have worked without thought of gain, without any respect for criticism, who have *done something they wished to do.* And that is the charm of the exhibition.

Dr. W. W. Harvey's work stands out. Seven years ago, at the first doctors' art exhibit, he had vision without mastery. He has learned a professional technique and shows delightful aquarelles, one at least eminently admirable.

Dr. J. H. Means and Dr. Harold W. Dana, competent watercolorists, are well represented.

Dr. F. C. Irving shows a view much discussed pro and con, a lake and far shore seen under pines. One birch tree might be omitted from the composition, but it is good and full of right feeling.

Dr. J. C. Janney's portrait of the old derelict and the head of a girl are especially noteworthy, as well as two of his landscapes.

Dr. S. H. Sturgis has an admirable oil study of a boy's head in profile, and a "cloud-scape" by Dr. M. A. Gilbert is worth mention.

Dr. F. B. Talbot's still-lifes are amazingly good, especially the African daisies, and of like meticulous and delicate workmanship are Dr. J. D. Barney's lovely flower drawings. Dr. L. W. Baker's pencil portraits, and heads by Dr. E. C. Romberg done in his odd ingenious gold method, are excellent.

In sculpture, Dr. W. B. Cannon shows two interesting heads, and Dr. S. C. Wiggin has several pieces, and is at his best in the delightful group of three children and in the toddling boy.

Dr. F. J. Cotton has many things, competent and whimsical, which interest many people. The overmantel design, "Says I to He," seems to have won attention and discussion. His "Elderly Faun" is again shown.

Dr. H. P. Mosher has an admirable bit in Imhotep, the first physician, and quaint and interesting wood carved reliefs. One wishes that he would, with his ability, enlarge his scope and scale as he so well could.

Not to be overlooked is Dr. L. W. Hill's case of "decoys" — wonderful wood carvings of wild ducks, lovely in color and finish.

In the end the impression is of work done with pleasure in the doing of it.

This sketch does not depict all of the very interesting products of the doctors' conception of art, and without doubt some not here mentioned may get a blue ribbon. That is the trouble in trying to call attention to the work of artists, but visitors may feel that adequate discrimination has not been exercised by the author of this reference.

A Committee of well-known artists of Boston, consisting of Charles H. Woodbury and Herman D. Murphy, painters, Joseph Coletti, sculptor, and Anthony J. Philpott, art critic, met at the Boston Medical Library on Monday afternoon, April 30, and awarded first places to the following exhibitors:

Oil painting. "Portrait." By James C. Janney, M.D.

Water color. "Mt. Haystack, Vt." By William W. Harvey, M.D.

Pencil drawing. "White Pine Blossoms." By J. Dellinger Barney, M.D.

Sculpture. "Helen." By Walter B. Cannon, M.D.

CORRESPONDENCE

THE ENLARGED *BULLETIN OF THE AMERICAN SOCIETY FOR THE CONTROL OF CANCER*

April 26, 1934.

Editor, *New England Journal of Medicine,*

The monthly *Bulletin of the American Society for the Control of Cancer* has been recently enlarged and expanded. It contains articles of interest and significance to members of the medical profession who are concerned in the treatment of cancer, as well as to those physicians who are interested in the control of the disease.

A subscription to the *Bulletin* is included in the annual membership of the Society ($5.00), but it may also be obtained at a cost of $1.00 a year by those who do not wish to become members. A number of physicians in other states have been glad to avail themselves of the opportunity to keep their information up-to-date on the subject. Sample copies of the *Bulletin* will be sent immediately on application to the office of the American Society for the Control of Cancer, 1250 Sixth Avenue, New York City.

Sincerely yours,

CHANNING C. SIMMONS, M.D.,
Chairman, Massachusetts Committee,
American Society for the Control of Cancer.

THE RELATION OF PUBLIC HEALTH TO PRIVATE PRACTICE

To the Editor:

At a recent meeting of my district society, an address was given on The Relation of Public Health to Private Practice. The discussion that followed was illuminating. One physician said that he should (for the price of a visit!) be allowed to take down a measles quarantine card rather than have that service performed by a public health nurse! Does he not realize that it is because of that attitude that he is not employed more? If he were a layman would he feel that it was fair to have to pay for the visit of a supposedly skilled man to have that unskilled function performed? Small wonder that

physicians are having hard sledding and that the public clinics are crowded!

Other criticisms made showed how little doctors realize how much health organizations do for us. The general feeling seemed to be that health departments, through the baby clinics, T. A. T. clinics, etc., take patients from practitioners. As a matter of fact most such clinics were started by private agencies, and were only taken over by the health departments on the request of the agencies after their value had been demonstrated. The medical profession did nothing toward this; had it, it would have been "advertising" unethically. But now that the public has been educated we doctors feel that something has been "slipped over" on us; here is an apparently "good thing" and we ought to "bone in". We do not seem to realize that every child who comes to our offices for T. A. T. does so directly or indirectly because of the influence of the clinics; that every child who comes for an examination and follow-up, when well, does so for the same reason; and that many children who would never have been known to need corrective work have been sent to us because clinics have discovered defects.

Some years ago during a rabies scare, two doctors offered to vaccinate any dog whose owner brought it to a "clinic". The only charge made was for the vaccine. The veterinarians of the town protested that their province was being invaded. A check-up was made, and it was found that for every dog clinic-treated, an owner went to a veterinarian and had his dog immunized privately. Had it not been for the clinic, probably none of these would have been done.

The fact that the distribution to private physicians of material from the State Laboratory is greater in those towns where public clinics are most active is a well-known fact, and one on which only one possible construction can be put. Instead of combating clinics we doctors should be backing them wholeheartedly, both from selfish and altruistic motives.

Once upon a time a child went out into the world seeking happiness, but he could not find it. A fairy met him and told him to stop looking, but to give away as much happiness as he could. The first thing the child knew, he found that he had more happiness than he knew existed in all the world. We do not seem to realize that, hard hit as we are, others have been hard hit, too. Some day the depression may end. But the depression is not the real trouble; the real trouble is that we are all too selfish.

ANONYMOUS.

April 22, 1934.

RECENT DEATHS

THE PASSING OF DR. WILLIAM H. WELCH

All over the world there will be a feeling of sadness in the minds of those who know of the accomplishments of the great leaders in medical progress in noting the decease of Dr. William Henry Welch, April 30, 1934.

The *Journal* will make especial reference to the life of this eminent physician in next week's issue.

MACDONALD—COLIN WILLIAM MACDONALD, M.D., of 31 Hampstead Road, Jamaica Plain, Mass., died April 20, 1934.

He was born in 1858 and graduated in medicine from the Bellevue Hospital Medical College in 1887.

Dr. Macdonald practiced in Roxbury for many years. He retired from practice in 1933 and moved to Jamaica Plain. Evidence of his position in his community appears in the record of attendance of state officials and other distinguished persons at his funeral.

He joined the Massachusetts Medical Society in 1887 and was retired as of December 31, 1933. He was a member of the Council for a great many years and a past president of the Norfolk District.

Dr. Macdonald is survived by his widow, Mrs. Helen A. Macdonald; two daughters, Miss Isabel Macdonald and Mrs. John Hennessey; and one son, William C. Macdonald.

POST—ABNER POST, M.D., of 130 Brattle Street, Cambridge, died April 20, 1934. He was born in 1844, the son of Sylvester Gilbert Langdon and Sarah Marie (Post) Langdon. By request of his maternal grandfather, he changed his name to Abner Post when he was twelve years of age.

He was educated at Williston Seminary, Easthampton, Massachusetts, and graduated from Yale in 1866. Harvard University Medical School gave him his M.D. degree in 1870. He served as intern at the Massachusetts General Hospital, as assistant surgeon at the U. S. Marine Hospital at Chelsea, surgeon at the Boston City Hospital, and the Children's Hospital. He was on the staff of the Boston Dispensary for several years.

He was the oldest living Emeritus of the Harvard Medical School faculty, and a member of the honorary staffs of the Boston Dispensary, the Boston City Hospital, and the Massachusetts General Hospital. He joined the Massachusetts Medical Society in 1870, and was a Fellow of the American Medical Association, a member of the American Association of Genito-Urinary Surgeons, the American Dermatological Society, and the New England Dermatological Society. He served as Assistant Editor of the *Boston Medical and Surgical Journal* during the years 1881-1890, and was author of many monographs dealing with genito-urinary diseases.

He was a member of the St. Botolph, the University, the Yale, and the Harvard Clubs.

His wife, Laura Knight Post, died in 1927. He is survived by a daughter, Mrs. Stephen A. Breed; a granddaughter, and General Jesse F. Stevens, his stepson.

NOTICE

MEDICAL STUDY TRIP TO HUNGARY

At the invitation of the Hungarian Medical Postgraduate Committee of Budapest, Professor Emil de Grosz, President, and of the Association "Budapest Town of Medicinal Springs", Archduke Dr. Joseph Francis, President, a medical study trip to Hungary is being organized. The plans provide for a fortnight visit to Hungary during which there will be postgraduate lectures and demonstrations in English at the principal University clinics and at the municipal thermal baths and springs. Reduced railroad fares and hotel rates are granted by the Hungarian Government. The party will sail from New York on August 18, 1934, visiting Munich and Oberammergau en route. The return trip may be made, optionally, via Berlin, Paris, or Italy, arriving back in New York on September 30.

American physicians of good standing are invited to join. The American Committee of the study trip consists of Harlow Brooks, M.D., Chairman, Charles G. Kerley, M.D., Jerome M. Lynch, M.D., Wendell C. Phillips, M.D., and Erwin Torok, M.D. Richard Kovacas, M.D., 110 Park Avenue, New York City, is Secretary.

REPORTS AND NOTICES OF MEETINGS

THE GREATER BOSTON MEDICAL SOCIETY

The Greater Boston Medical Society met on the evening of April 17 in the amphitheatre of the Beth Israel Hospital. Dr. F. H. Lahey spoke on "The Management of Cholelithiasis and Biliary Tract Disease."

In speaking of the diagnosis of biliary colic, Dr. Lahey stated that the pain with its typical radiation offers little difficulty to the clinician. If the pain has subsided when the patient is first seen, a very useful finding for the diagnosis is residual tenderness in the right upper quadrant. This symptom depends upon the fact that inflammation almost invariably accompanies biliary stones that give symptoms.

There are two chief types of stones found in the gallbladder. The pure cholesterol stone is the only silent stone and even this frequently gives symptoms by plugging the cystic duct and damming up the bile in the gallbladder so that it stagnates and becomes infected. The other type of stone is the calcium bilirubin caiculus which is the one most frequently found in the pathological gallbladder. In this latter group of cases we quite frequently find the stones incidentally at operation or when an x-ray is made for some other purpose. But a careful investigation into the history almost invariably discloses some vague digestive discomfort or disturbance. The early diagnosis of gallbladder disease is therefore only possible by scrupulous attention to what the patient considers only minor symptoms.

In such cases the dye test has proved invaluable as a diagnostic aid. Owing to the many unfavorable reactions to the use of intravenous dye, Dr. Lahey advocates the administration by mouth routinely and by the use of the intravenous method for questionable cases. The intravenous route should not be used in patients who have arteriosclerosis, or coronary disease, and, in the experience of the speaker, subacute cholecystitis has probably been aggravated to the acute stage by intravenous administration of the dye.

The interpretation of the dye test should be seasoned by the clinical findings. Such conditions as acute peptic ulcer, pregnancy and spastic colitis frequently show a non-functioning gallbladder when the dye is given by any route. Then again one finds cases with typical gallstone colic that show a normally filling viscus. In such instances one should operate in spite of the dye test.

The speaker made an especial plea for early diagnosis of gallbladder disease because the mortality increases directly with the duration of the disease. Once cholelithiasis has been diagnosed whether as an incidental finding or as a possible cause of symptoms, operation should be advised. If the patient goes on to old age and develops a chronic cholecystitis, he is not nearly so favorable a risk for operation. Then again he may at any time develop an acute cholecystitis in which condition he is a much poorer operative risk.

The entire question of early surgery for cholelithiasis hinges on the damage upon the biliary tree and the liver caused by the resultant infection. In this connection Dr. Lahey compared gallbladder surgery with surgery on the prostate gland. Formerly the surgeon felt that his patients died from bladder sepsis when he removed the prostate gland, but now he realizes it is largely a question of kidney reserve. So in gallbladder disease the operative mortality depends upon the degree of encroachment of liver reserves by the ascending infection. To wait until the patient has had repeated attacks of biliary colic is to invite end-stage pathology with a contracted gallbladder, cholangitis and curtailed liver reserve.

In this connection Dr. Lahey showed slides of x-ray films that depicted various stages of dilatation in the biliary tree. Lipiodol had been injected into the common duct postoperatively and in cases of long-standing gallbladder disease even the smallest radicals of the hepatic duct were widely dilated while the common duct was several times normal size, showing the effect of back pressure upon the biliary tract.

By means of lantern slides the speaker brought out certain important points in surgical technique. Quite frequently patients find themselves suffering from the same symptoms that brought them to operation, after the gallbladder has been removed. This may be the result of extensive liver damage from ascending infection, but quite as often it is caused by adhesions forming between the liver bed and the duodenum owing to incomplete closure of the peritoneum over the bed of the gallbladder.

Strictures of the common duct are related largely to improper handling of the cystic artery during the

operation. The artery and duct should always be ligated separately and the artery should be tied off and cut early in the operation. This latter step is important in so far as the cystic duct pursues a tortuous course compared with the artery and hence any tension on the gallbladder is referred to the cystic artery with danger of tearing it. In the event of bleeding from the artery, one should not grope blindly and attempt to snap it for fear of including the common duct in the hemostat, but by placing a finger in the foramen of Winslow exert pressure on the hepatic artery and thus control the hemorrhage while a hemostat is placed on the bleeder.

In recent years the speaker has opened the common duct more frequently than before, with the result that an increasing percentage of stones has been found in the duct. A history of jaundice is not the sole criterion for opening the duct since 36 per cent of patients with proved common duct stones have had no jaundice. Any of the following findings should lead the surgeon to explore the common duct:

1. A history of jaundice.
2. A dilated common duct.
3. Palpation of a stone in the duct.
4. Thickening of the duct.
5. A contracted gallbladder.

At present Dr. Lahey opens the common duct in 46 per cent of cases operated upon for gallbladder disease and in 21 per cent of cases stones are found. With increase in the percentage of choledochostomy the mortality rate has declined measurably, for it removed the chief cause of blockage and resultant hepatic infection. The mortality rate for the past year was 1.7 per cent.

Among the postoperative patients one finds occasionally that colic persists as a symptom. In such cases duodenal drainage is of great help in determining whether a stone has been left in the common duct, for 96 per cent of the cases with cholesterol or calcium bilirubin crystals show common duct stones. When gradual, painless jaundice develops after removing the gallbladder, a stricture of the common duct should be suspected.

Courvoisier's law states that obstruction of the common duct by a stone is accompanied by a contracted gallbladder, while obstruction due to other causes gives a dilated gallbladder. Dr. Lahey stated that if we add to the criterion of obstruction (1) painless, progressive jaundice and (2) persistent stools with absence of bile, the law is of much greater assistance in making the differential diagnosis.

Dr. Lahey spoke of the invaluable aid given by intravenous administration of glucose to the patient postoperatively. This is of benefit in sustaining the hepatic reserve and in preventing hemorrhage. In the event of postoperative hemorrhage, transfusion of whole blood should be used without stint. A brilliant example of this was a case receiving a total of eleven transfusions after operation with recovery.

The speaker advocated spinal, supplemented with local as the ideal anesthetic for gallbladder surgery. The next best is ethylene gas, then gas-oxygen, then ether, and last of all chloroform. The last two tend to produce liver damage and jeopardize an already handicapped organ.

An interesting discussion followed the paper and the meeting adjourned at 10:20.

THE WORCESTER NORTH DISTRICT MEDICAL SOCIETY

The seventy-fifth annual meeting of the Worcester North District Medical Society was held at the Burbank Hospital, Fitchburg, Mass., at 1 P.M. Wednesday, April 25.

The annual oration was delivered by Dr. Andrew R. MacAusland of Boston. His subject was "Recent Trends in the Treatment of Fractures." His talk was most interesting and thoroughly enjoyed by the forty-five members present.

His Honor, Mayor Robert E. Greenwood, president of the board of trustees of the hospital, extended the greetings of the city to the physicians.

A committee was appointed to revise the old by-laws which have been in use since 1887. A fine chicken dinner was served by the hospital. The following designated officers were elected for the ensuing year:

President: C. B. Gay, Fitchburg.
Vice-President: C. H. Jennings, Fitchburg.
Secretary: F. M. McMurray, Fitchburg.
Treasurer: F. H. Thompson, Jr., Fitchburg.
Commissioner of Trials: H. R. Nye, Leominster.
Councilors: F. R. Dame, Athol; T. R. Donovan, Fitchburg; A. F. Lowell, Gardner; H. R. Nye, Leominster; W. F. Sawyer, Fitchburg.
Censors: Supervisor, T. R. Donovan, Fitchburg; J. J. Curley, Leominster; George Mossman, Gardner; F. H. Thompson, Jr., Fitchburg; A. A. Wheeler, Leominster.

FRANCIS M. MCMURRAY, M.D., *Secretary.*

THE CUTTER LECTURE ON PREVENTIVE MEDICINE

The Cutter Lecture on Preventive Medicine was given in the Amphitheatre of Building E at the Harvard Medical School on Friday, April 20, at 5 P.M. The speaker was Dr. Anthony J. Lanza, assistant medical director of the Metropolitan Life Insurance Company. Dr. Lanza, introduced by Dr. Milton J. Rosenau, has been a member of the United States Public Health Service and of the Rockefeller Foundation and has been interested for many years in medical problems connected with the mining industries. The subject of his lecture was "Silicosis and Asbestosis."

Silicosis was described as a disease due to breathing air containing silica (silicon dioxide) which leads to definite fibrotic changes in the lungs. The clinical picture is characterized by dyspnea, decreased chest

expansion, lessened capacity for work, and a striking absence of fever. There are characteristic x-ray findings and persons afflicted with this disease show a distinctly increased susceptibility to tuberculosis.

Silicosis is an exclusively occupational disease. It is not contracted from the atmospheric dust on windy days, because our natural defenses are well able to protect us from the inhalations of dust occurring under ordinary circumstances. It is only when exposed to atmospheres very heavily laden with particular kinds of dusts, such as occur in some industries that our natural defences break down. For the development of silicosis, the silica inhaled must be free (not combined) and the particles must be under ten micra in greatest diameter. The number of particles per cubic foot of air must be very large. Individual susceptibility plays no part in this disease except in cases of preëxisting pulmonary disease. Dr. Lanza has observed, however, that Negroes stand silicosis much more poorly than white men.

The action of silica in producing pulmonary changes is physico-chemical and as well as producing fibrosis leads to a greatly increased susceptibility of the tissues to the tubercle bacillus. The fibrotic process begins in the subpleural region and gradually progresses toward the hilum. In the absence of tuberculosis, necrosis with cavity formation does not occur. Hemoptysis is seen very occasionally. The blood pressure is of no diagnostic significance. The picture is entirely different if a tuberculous process is aroused, leading to the rapidly fatal outcome of "galloping consumption." There is usually a striking difference in silicosis between signs and symptoms. A patient may have distressing dyspnea, using all his accessory muscles of respiration, and yet on physical examination one may find hardly more than somewhat diminished breath sounds. The presence of moist râles always means a superimposed infection.

Silicosis has long been associated with the mining industry (cf. "miners' phthisis"). The miners themselves have learned to distinguish the "catching" from the "not-catching" variety of consumption. The danger of silicosis in mines is entirely dependent upon whether the ore is deposited in a silica-containing bed. The diagnosis of silicosis is made from a history of exposure and a characteristic x-ray film. The latter shows in the early stages a generalized arborization in both lung fields with some discrete fibrotic nodulation. In the latter stages, the typical "snow storm" appearance is produced.

From the medico-legal standpoint, the disease is classified according to various stages for purposes of determining compensation. The most recent classification is as follows:

1. Definitely negative.
2. More fibrosis than usual.
3. Decidedly more fibrosis than usual.

The above three groups are considered as negative. X-ray appearances falling in the following three groups are considered positive:

4. First-stage silicosis: These cases show definite discrete nodules by x-ray, but are able to work.
5. Second-stage silicosis: These are characterized by larger nodules and the diaphragm is frequently distorted. Their capacity for work is impaired.
6. Third-stage silicosis: In these cases there is a coalescence of nodules and the patients are unable to perform any work.

Once the diagnosis is established, the prognosis is invariably poor. The majority die of tuberculosis. There is no treatment other than symptomatic for the disease, but the patients do live longer if they are kept up and about as long as possible rather than in bed. Pneumonia is a serious disease in patients with silicosis and lobar pneumonia commonly terminates in empyema.

Dr. Lanza discussed other factors of importance in silicosis, among them age, preëxisting pneumoconiosis, and syphilis. Men over forty years of age develop silicosis twice as rapidly as younger men, and a preëxisting pneumoconiosis, such as from coal dust, makes the lungs very much more susceptible to silica. Silicosis also develops about twice as rapidly in luetics. Hence it is essential that persons with strongly positive Wassermann reactions in a silicosis community receive adequate antiluetic treatment.

The prevention of silicosis is a difficult problem. The control of dust from its point of origin by means of water, exhaust ventilation, or the two combined has been of only moderate success. Once the dust is in the air, no practical means has been devised as yet to keep it from being inhaled. Dr. Lanza discussed methods of dust sampling and mentioned the work being done along these lines in Dr. Drinker's laboratory at the Harvard School of Public Health.

The medical supervision of employees in the silicosis trades is only palliative and an acknowledgment of the impossibility of eliminating the dust from these trades at the present time. Dr. Lanza discussed the serious economic problems involved in dismissing a skilled workman from his trade because of early silicosis. The silicotic with a superimposed tuberculous infection, however, is a definite menace and should be pronounced disabled, regardless of any other consideration.

The remainder of the lecture was devoted to the relatively more modern disease "Asbestosis." This disease is due to the inhalation of a combined silicate of magnesia, zinc, and nickel. The particles involved in this disease are much larger than in silicosis and they are not carried off by the lymphatics, nor do they obliterate the alveoli, as occurs in silicosis. A collar of connective tissue is formed in the lung "like a fine web spun criss-cross throughout the lung". "Asbestos bodies" were first described in 1924. They are yellowish to brown needle-like bodies often with a rounded knob at either end. Their presence in the sputum means exposure to asbestos dust and not necessarily asbestosis.

The prominent symptoms in asbestosis are dyspnea and cyanosis. The latter is not found in silicosis. X-ray films often do not show sufficient changes to account for the symptoms. The common picture is a ground-glass appearance in the lower portion of the lung fields. The shadows are softer than in silicosis and an unexplained cardiac enlargement is uniformly found.

Uncomplicated cases of asbestosis die of cardiac failure. The cases progress to a fatal termination even if removed from the faulty environment. The incidence of the disease is less among miners than in those engaged in the manufacture of asbestos. The relation to tuberculosis is unlike that of silicosis. In the examination of 300 cases of asbestosis, Dr. Lanza found little evidence of tuberculosis and he believes that tuberculosis when it occurs in asbestosis is a merely coincidental disease.

The problems of prevention and control are the same as in silicosis. In conclusion, Dr. Lanza emphasized the importance of previous occupation in the past history of any patient.

ECONOMIC ASPECTS OF MEDICAL PRACTICE

Dr. Richard M. Smith, member of the Committee on the Costs of Medical Care, presented a very interesting talk on the "Economic Aspects of Medical Practice" on Monday, April 16, at 5 P.M. in the amphitheatre of Building C at the Harvard Medical School, under the auspices of the Phillips Brooks House Association.

In the past half century, medical men have devoted their time for the most part to the advancement of medical science with very little attention given to methods of rendering medical service. Medical service is primarily a personal matter and this relationship between doctor and patient prevailed in the rural communities of the past century. Industrialization, however, has complicated matters and various conditions of maladjustment have arisen. Among the existing difficulties, Dr. Smith mentioned the lack of coördination between the services of the specialist and the general practitioner. The laity is handicapped by being unable to judge the quality of medical care rendered. There is no available method at present for the standardization of the quality of medical service. Not only is there an inequality of service rendered, due to both natural endowment and training, but it is not equally distributed geographically. In California, for example, there is one physician per 570 population, while in South Carolina there is one per 1430. It has been estimated that to meet the demands, 18 per cent of physicians should be specialists. Actual figures, however, reach 45 per cent, indicating an overabundance of specialists.

Dr. Smith discussed another group of difficulties under maladjustments in the utilization of medical facilities. This depends theoretically upon the need for medical services and the ability of people to pay for them. It was pointed out, however, that the actual demand for medical services is not the same as the existing need for them. Even in the higher classes the demand is only 55 per cent of the need. Medical facilities are therefore not utilized, partly because the need for them is not always recognized and partly because people are unable to pay for them.

Statistics have shown that the total cost of medical care is quite unevenly distributed. About half the total cost has proved to be in connection with hospitalized illness. Dr. Smith presented a figure for the average net income of practicing physicians in 1929, which was $5300. For salaried physicians it was $4500. An important observation is that about 40 per cent of the physician's total income goes for overhead.

The remainder of the talk was devoted to possible solutions of the above problems. Dr. Smith pointed out that each community has to meet its own peculiar problems. He suggested the possibility of agencies, controlled by physicians, for the coördination of medical services. Careful consideration should be given to the type of medical student accepted for training as well as to the type of training offered. The development of specialists should be restricted. Fortunately there is a natural trend in this direction at the present time. The speaker favored the development of postgraduate instruction for the improvement of the quality of the service rendered by the general practitioner. Public Health activities should receive more adequate support.

The consensus at present is that most attention should be devoted to the development of the voluntary hospital. Adequate facilities for the study of patients would thus be offered in suburban districts and affiliations could be made with a metropolitan hospital for the use of more elaborate equipment or for the study of more complicated cases. The voluntary hospital would furnish a means for the supervision of the quality of medicine practiced and members of the staff would stimulate one another toward higher standards. Group Clinics are being tried at the present time, but the difficulty seems to be that the personal relationship of the doctor, the patient and his family is impaired. Objections have arisen also against the control of medicine by the county medical societies.

Medical services may be paid for in three ways: (1) payment of individual fees; (2) taxation; and (3) insurance. The first is for the most part the method in vogue at the present time in this country. The second is recognized for the treatment of chronic diseases, for the army and navy, for public health, and for the maintenance of local municipal hospitals. In the third, or insurance method, we have to choose between voluntary and compulsory insurance. The latter can be effected only by the government and it would really lead to state medicine which may be undesirable, In countries where voluntary insurance was at first attempted, the system ultimately was changed to the compulsory type. The Committee on the Costs of Medical Care believes that voluntary insurance ought to be tried but it

should be controlled not by insurance companies but by the medical profession. Insurance for hospitalized illness is well recognized in England and it has been established in 25 cities in this country, while plans are maturing in 50 other cities.

In conclusion, Dr. Smith emphasized the need for study, experiment, and the maintenance of an open mind among those who deliver medical service.

SOUTH END MEDICAL CLUB

At the regular monthly meeting of the South End Medical Club, held on April 17, 1934, Dr. Richard M. Smith, Assistant Professor of Pediatrics and Child Hygiene of the Harvard Medical School, was the speaker.

His subject was "Acute Abdominal Conditions in Children." An abstract is as follows:

One of the most frequent conditions in children for which the physician is consulted is abdominal pain. In infants serious disease within the peritoneal cavity may exist without complaint of pain. Careful judgment is necessary in both conditions to determine the exact pathological state, for treatment of the various possible conditions is widely different.

In dealing with children one must constantly bear in mind the possibility—one might almost say, so far as infants are concerned, the probability—that some congenital anomaly or retarded developmental process is responsible for the pathologic state.

Some of the common conditions giving rise to acute abdominal symptoms in infants and children will be considered from a diagnostic and medical point of view, as the general practitioner is usually the first physician called to see the ill child and upon his skill at that time may depend the life of the patient.

There was a discussion of congenital hypertrophic stenosis of the pylorus, intussusception, intestinal obstruction due to congenital abnormalities, appendicitis and its special signs and symptoms in children, abdominal symptoms associated with acute respiratory infections, diseases of the kidney producing abdominal signs, spastic colon, abdominal tumors, abdominal purpura, and allergic conditions.

With these possibilities in mind it is important for the physician to secure in the first instance an accurate history, remembering that the facts may be colored in presentation by the point of view of the mother. Inspection should be carried out carefully before the child is disturbed and then the local examination made, recognizing the importance of slight physical signs. The rectal examination should be made last but not omitted. There should be a careful general examination especially of the lungs for early signs of pneumonia, of the heart for evidences of general infection, of the throat and ears for signs of upper respiratory disease, and the skin for evidence of purpura and general septicemia. Certain special examinations should be made. In almost every instance a white blood count and a urine examination and in many instances an x-ray without barium to determine the presence of gas within the intestinal tract. In some instances a barium examination also should be made as it is of particular interest in revealing the condition of the colon.

MASSACHUSETTS TUBERCULOSIS LEAGUE

Annual Meeting

The twenty-second annual meeting of the Massachusetts Tuberculosis League was held at Hotel Statler on April 12, 1934. Approximately one hundred members of the League and its twenty-eight affiliated organizations were present from all parts of the State.

The proceedings began with the annual address of the President, Dr. Frederick T. Lord, in which he pointed out the progress made by the League and its branches during the past year. He stressed the importance of coöperation with the State and County Sanatoria when they take on the work of the Chadwick Clinics in the latter part of this year. The ten-year period for the Chadwick Clinics terminates with the end of the current school year in June. Under the plan developed for State-wide continuation of the Clinics, the State and local Sanatoria, coöperating with the local school boards, will continue the service wherever possible.

Frank Kiernan, Executive Secretary, gave an account of the work of the League bringing out the outstanding accomplishments since April, 1933, which included a tuberculosis survey of Cambridge, an intensive study of one of the Summer Health Camps operated by an affiliated organization, and coöperation with the State and local public health authorities.

Miss Jean V. Latimer, Educational Secretary of the League, outlined the widespread and increasing use of the Tuberculosis Unit, prepared by her and published by the League last year. The Unit has been taken up in twenty states and is now being used in approximately one hundred high schools of cities and towns in Massachusetts.

At the annual luncheon meeting, the speakers were Dr. Henry D. Chadwick, State Commissioner of Public Health, and Dr. Kendall Emerson, Managing Director of the National Tuberculosis Association. The theme of their addresses was "Tuberculosis Programs in These Changing Times."

Dr. Chadwick addressed his considerations of this subject to problems in Massachusetts. He urged a closer coöperation of the volunteer tuberculosis associations and the State, County and local Sanatoria. He also recommended that the Tuberculosis Associations which operate Summer Health Camps should endeavor to secure more funds for the camp work from service organizations and constantly reduce the amount of Seal Sale money used in operating the camps. He indicated that it is the intention of the Department to endeavor to interest school physicians so that they will carry on tuberculosis testing of children as part of the school

routine. It is planned to examine the children in the seventh, ninth and eleventh grades; also to x-ray these children at the schools using a portable machine. Interpretation of the x-ray pictures will be made by the sanatorium serving the school district. Dr. Chadwick urged the affiliated organizations to have their nurses coöperate in helping promote these school examinations.

Dr. Kendall Emerson, Managing Director of the National Tuberculosis Association, discussed tuberculosis problems from the national point of view. He stated that in the year 1934, there is no indication that new lines of attack on the tuberculosis problem are to be developed. He stressed the importance of intensifying the methods which have been proved to be successful here and which are gradually being adopted in other parts of the country. He referred to the enormous problem of transients in the Southwest and described the attempts which the Federal Government is making to meet it. Formerly, the problem of the transients was a comparatively small one. Now, with thousands of people constantly migrating from the North and East to the West and Southwest, it has become a menace to the health of the people in those sections of the country. Dr. Emerson emphasized the possibilities of health education open to nurses in their dealing with families and individuals in their field work. He commended the League for its important contribution in the field of child health education through training teachers.

The experimental work in the treatment of tuberculosis through the use of gold and B.C.G. was described by Dr. Emerson who stated that in America these methods are being constantly watched and in New York City an intensive experiment is being done with the Calmette treatment. The National Association neither approves nor disapproves of these proposed new methods but will advocate them if they are found to be successful after the experimental period.

Dr. Emerson concluded his address with a description of the work of the National Health Council, the Presidency of which has recently been assumed by Colonel Theodore Roosevelt.

At the election of Officers and Directors, the following were chosen for the year April, 1934 to April, 1935: President, Dr. Frederick T. Lord of Boston; Honorary Vice-Presidents, Dr. George H. Bigelow, Milton; Dr. Henry D. Chadwick, Boston; Rt. Rev. William Lawrence, D.D., Boston; Rabbi Harry Levi, Brookline, and William Cardinal O'Connell, Brighton; Vice-President, Dr. Francis P. Denny, Brookline; Treasurer, Mr. Arthur Drinkwater, Cambridge; Assistant Treasurer, Mr. Romney Spring, Boston; Executive Committee, Dr. Walter P. Bowers to succeed himself, Dr. Alton S. Pope to succeed himself, and Mr. Raymond S. Patterson to succeed Mr. William N. Goodell, resigned; Clerk of the Corporation, Mr. Frank Kiernan, Belmont. The Directors-at-Large are Mr. Frederic Bailey, North Scituate; Dr. George H. Bigelow, Milton; Dr. Walter P. Bowers, Clinton; Dr. Robert P. Carpenter, North Adams; Dr. Henry D. Chadwick, Boston; Miss Josephine B. Colt, Boston; Mrs. Leslie B. Cutler, Charles River; Dr. Francis P. Denny, Brookline; Mr. Arthur Drinkwater, Cambridge; Dr. C. Benjamin Fuller, Waltham; Rev. Walter F. Greenman, West Newton; Mrs. John D. Henry, Boston; Dr. William O. Hewitt, Attleboro; Professor Murray P. Horwood, Newton Centre; Dr. Roger I. Lee, Boston; Dr. Frederick T. Lord, Boston; Dr. Carl C. MacCorison, North Wilmington; Dr. Richard P. MacKnight, New Bedford; Mr. David Moxon, Framingham; Mr. Raymond S. Patterson, Newton; Dr. Alton S. Pope, Newtonville; Dr. Sumner H. Remick, Waltham; Mr. John Ritchie, Malden; Mr. Thornton K. Ware, Fitchburg; Miss Margaret Weir, Beverly.

The Representative Directors are Mr. George E. Dean, Falmouth; Dr. Floyd R. Smith, Pittsfield; Dr. John B. Hawes, 2nd, Boston; Dr. Donald S. King, Boston; Mr. Alexander Wheeler, Boston; Miss Sarah Hyams, Jamaica Plain; Dr. Garnet P. Smith, Attleboro; Mrs. Mabel Greeley Smith, Cambridge; Mrs. E. Frank Guild, Chelsea; Dr. Olin S. Pettingill, Middleton; Mrs. H. G. Hamann, Swampscott; Mrs. A. L. Johnson, Orange; Mr. Walter S. Barr, West Springfield; Mr. Clifton H. Hobson, Palmer; Hon. Clarence E. Hodgkins, Northampton; Dr. Frederick R. Radcliffe, Haverhill; Dr. S. L. Skvirsky, Holyoke; Mrs. Frances B. Mowry, Salem, New Hampshire; Mr. Charles H. Hobson, Lowell; Mrs. Carolyn M. Engler, Lynn; Dr. Samuel Hoberman, Malden; Mr. Richard C. Maloney, Nantucket; Dr. James F. Brewer, New Bedford; Mrs. Allan Shepard, Newburyport; Mrs. Charles Riley, Chestnut Hill; Dr. Nahum R. Pillsbury, South Braintree; Mrs. William C. Rogers, Cohasset; Mrs. Ralph S. Drury, North Leominster; Mrs. B. Milo Burke, Brockton; Dr. J. Frank Donaldson, Salem; Mrs. Albert Cross, Weston; Mrs. T. F. Kimball, Belmont; Rev. J. F. McGillicuddy, North Brookfield; Mrs. Chandler Bullock, Worcester; Dr. Arthur K. Stone, Framingham Center.

WILLIAM HARVEY SOCIETY

The next meeting of the William Harvey Society will be held Friday, May 11, in the Auditorium of the Beth Israel Hospital, Boston, at 8 P.M.

PROGRAM

Speaker: Dr. Archibald Malloch, Librarian, New York Academy of Medicine.

Subject: "William Harvey."

Chairman: Dr. Charles F. Painter, formerly Dean, and Professor of History of Medicine, Tufts College Medical School.

SOUTH END MEDICAL CLUB

The next regular meeting of the South End Medical Club will be held at the office of the Boston Tuberculosis Association, 554 Columbus Ave., Boston, on

Tuesday, May 15, 1934, at 12 noon. The speaker will be, Hugh Barr Gray, M.D., Superintendent and Physician-in-Charge, Washingtonian Home, 41 Waltham St., Boston. His subject will be "The Alcoholic." All physicians are cordially invited to attend. The usual luncheon will be served.

THE HARVARD MEDICAL SCHOOL ALUMNI ASSOCIATION

The Annual Meeting of the Harvard Medical School Alumni Association will be held Saturday, May 12. Ward rounds (10 a.m. to 12 m.) and operations will be held at the Peter Bent Brigham, the Massachusetts General and the Boston City Hospitals. A business meeting and luncheon ($1.00) will be held in the gymnasium of Vanderbilt Hall at 12:30 p.m.

PHI DELTA EPSILON FRATERNITY

On Monday evening, May 7, 1934, at 8 p.m. the Phi Delta Epsilon Fraternity will hold its final Open Meeting of the year at the Evans Memorial Hospital Auditorium. The speakers and their topics for this program are Laurence B. Ellis, "Postural Changes in Blood Pressure"; Dr. Richard B. Capps, "Vasopressor Substances in the Blood and Urine in Normal Subjects and in Patients with Arterial Hypertension"; Dr. Soma Weiss, "The Etiology of Hypertension."

NORFOLK DISTRICT MEDICAL SOCIETY

The Annual Meeting of this society will be held in the Crystal Room of the Hotel Kenmore May 8, 1934. Telephone Kenmore 2770.

The business meeting will be at 6 P.M., the annual dinner at 7 P.M. and following the dinner there will be an illustrated lecture entitled "The Romance of News Gathering" by Mr. Alton Hall Blackington.

Members are invited to have ladies accompany them as in the past. Tickets for members will be $1.50 and for guests $2.50. Reservation cards must be in the hands of the Secretary by Saturday, May 5th.

FRANK S. CRUICKSHANK, M.D., *Secretary*,
1695 Beacon St., Brookline.

MIDDLESEX EAST DISTRICT MEDICAL SOCIETY

The annual meeting of the Middlesex East District Medical Society will be held at the Winchester Country Club at 1:00 p.m., Wednesday, May 9.

Speakers will be Drs. C. R. Baisley of Reading, A. P. Aitken, M. J. Quinn and W. L. McKenzie of Winchester and T. E. Dinan of Wakefield.

A group picture has been arranged for.

ALLAN S. CUNNINGHAM, M.D., *Secretary*.

ESSEX SOUTH DISTRICT MEDICAL SOCIETY

Annual meeting Tuesday, May 8, 1934, to be held at the Salem Country Club, Forrest Street, Peabody. Dinner at 7 P.M.

Speaker: Dr. Paul Wakefield, Superintendent of Maine Central Sanatorium.

Subject: "Comparison of Public Health in China and America."

RALPH E. STONE, M.D., *Secretary*.

WORCESTER DISTRICT MEDICAL SOCIETY

The Annual Meeting of the Worcester District Medical Society will be held during the afternoon and evening of Wednesday, May 9, 1934, at Worcester Country Club, Worcester, Massachusetts.

The many members will probably desire to play golf during the afternoon. The annual dinner will be served at 6:30 P.M. and this will be followed by the Business Session of the Annual Meeting at 7:45. The election of officers for the 1934-35 period will take place immediately after this business session.

The Annual Oration will be given by Dr. William F. Lynch and his subject will be "Our Early Heritage."

ERWIN C. MILLER, M.D., *Secretary*.

NEW ENGLAND PEDIATRIC SOCIETY

Saturday Afternoon, May 19, 1934, 2:30 D.S.T.
New Haven, Connecticut
Medical and Pediatric Amphitheatre
Room 1094, New Haven Hospital,
789 Howard Avenue

2:30-2:45 — Clinical Presentation, Dr. Grover F. Powers and Staff.

2:45-3:00—Mottled Enamel:
Nutritional Aspects, Arthur H. Smith, Ph.D.
Clinical Aspects, Bert G. Anderson, D.D.S.

3:00-3:30—Recent Advances in Nutrition of Interest to Pediatricians, Professor Lafayette B. Mendel.

Farnam Building, Room 2028

3:30-4:00—Demonstration of Apparatus for Stimulating Excitable Centers by Remote Control, Richard U. Light, M.D.

Auditorium Sterling Hall of Medicine

4:00-4:30—The Developmental Diagnosis of Infant Behavior and Its Relation to Clinical Pediatrics, Illustrated by Motion Pictures, Arnold Gesell, M.D.

At the conclusion of this session members of the Society are welcome to visit the Clinic of Child Development.

New Haven Medical Association Building,
364 Whitney Avenue

5:00-6:00—Social Hour.

6:00—Dinner.

7:00—Address by Dr. Louis C. Schroeder, New York City, "The American Academy of Pediatrics."

GERALD HOEFFEL, M.D., *Secretary*.

MASSACHUSETTS GENERAL HOSPITAL

A Clinical Meeting of the Staff of the Massachusetts General Hospital will be held in the Moseley Memorial Building, on Thursday, May 10, 1934, at 8:15 P.M.

PROGRAM

1. Certain Aspects of Lung Abscess Based on a Study of Two Hundred and Ten Cases—Dr. Frederick T. Lord and Dr. Donald S. King.

2. Benign Tumors of the Bronchus—Dr. Donald S. King.

3. Lobectomy and Total Pneumonectomy — Dr. Edward D. Churchill.

Physicians, medical students, nurses and social workers are cordially invited.

COMMITTEE ON HOSPITAL MEETINGS.

ESSEX NORTH DISTRICT MEDICAL SOCIETY

The Ninety-Third Annual Meeting of the Essex North District Medical Society will be held at the Andover Country Club on Wednesday, May 9, at 12:30 P.M., at which time there will be a dinner followed by the business meeting. At 2:00, Dr. L. M. Hurxthal will give a motion picture demonstration of synchronized heart action, and electrocardiograms. At 2:30, Dr. L. E. Phaneuf will address the meeting on "Office Gynecological Methods." At 3:00, Dr. John Sproull will speak on "A General Practitioner Looks at Coronary Thrombosis and Angina Pectoris."

There will be an opportunity for the members to play golf.

E. S. BAGNALL, M.D., *Secretary.*

HARVARD MEDICAL SOCIETY

The next meeting of the Harvard Medical Society will be held in the Peter Bent Brigham Hospital Amphitheatre (Van Dyke Street entrance), Tuesday evening, May 8, at 8:15 P.M.

PROGRAM

Presentation of Cases.

Factors Controlling the Peripheral Blood Flow in Man. By Dr. Norman E. Freeman.

Studies on the Innervation of the Blood Vessels and Their Application to Neurovascular Surgery. By Dr. James C. White.

Dr. Walter B. Cannon will preside.

JOHN HOMANS, M.D., *Secretary.*

TRUDEAU SOCIETY

The next meeting of the Trudeau Society will be held at the Worcester County Sanatorium, West Boylston, Mass., on May 8 at 4 P.M. Dr. Richard H. Overholt of the Lahey Clinic will speak on "Thoracoplasty".

MOSES J. STONE, *Secretary.*

SOCIETY MEETINGS, CONGRESSES AND CONFERENCES

May 3—Faulkner Hospital Clinical Meeting will be held at 5 P.M.

May 3—Clover Hill Hospital will hold a medical meeting in the Reception Room of the hospital at 161 Berkeley Street, Lawrence, at 9 P.M.

May 7—Phi Delta Epsilon Fraternity. See page 981.

May 8—Trudeau Society. See notice elsewhere on this page.

May 8—Harvard Medical Society. See notice elsewhere on this page.

May 10—Massachusetts General Hospital. See notice elsewhere on this page.

May 11—William Harvey Society. See page 980.

May 12—Harvard Medical Alumni Association. See page 981.

May 14, 15, 16, and 17—Thirtieth Annual Meeting of the National Tuberculosis Association. For details apply to the National Tuberculosis Association, 450 Seventh Avenue, New York City.

May 15—South End Medical Club. See page 980.

May 16—New England Obstetrical and Gynecological Society will hold its spring meeting at Portland, Maine. The registration of members will take place at the Maine General Hospital from 9 A.M. until 1 P.M., and in the afternoon at the Chamber of Commerce Building, 142 Free Street, from 2 P.M. until 5 P.M.
FRED J. LYNCH, M.D.
475 Commonwealth Avenue, Boston.

May 19—The New England Pediatric Society. See page 981.

May 26, 27, 28, and 29—The American Association on Mental Deficiency. Details may be obtained from the Secretary, Dr. Groves B. Smith, Godfrey, Illinois.

June 12—American Heart Association will meet at 9:30 A.M. at the Cleveland Hotel, Cleveland, Ohio.

July 24-31—The IVth International Congress of Radiology will be held in Zurich under the presidency of Professor H. R. Schnig. General Secretary Dr. H. E. Walther, Gloriastrasse 14, Zurich.

August 18 - September 30—Medical Study Trip to Hungary. See page 975.

September 3-6—American Public Health Association, at Pasadena, California. Dr. J. D. Dunshee, Chairman, Local Committee on Arrangements.

September 4, 5, 6—International Union Against Tuberculosis. For information address the National Tuberculosis Association, 450 Seventh Avenue, New York City.

DISTRICT MEDICAL SOCIETIES

ESSEX NORTH DISTRICT MEDICAL SOCIETY

Thursday, May 3—Censors' Meeting will be held at the Hotel Bartlett, Haverhill, for the examination of candidates.

May 9—See notice elsewhere on this page.
E. S. BAGNALL, M.D., Secretary.
281 Main Street, Groveland, Mass.

ESSEX SOUTH DISTRICT MEDICAL SOCIETY

Thursday, May 3—Censors' Meeting, at Salem Hospital, 3:30 P.M.

Tuesday, May 8—Annual Meeting. See page 981.
RALPH E. STONE, M.D., Secretary.
221 Cabot Street, Beverly, Mass.

FRANKLIN DISTRICT MEDICAL SOCIETY

The next meeting will be held on the second Tuesday of May at the Weldon Hotel, Greenfield, at 11 A.M.
CHARLES MOLINE, M.D., Secretary.
Sunderland, Mass.

HAMPDEN DISTRICT MEDICAL SOCIETY

May 3—Censors' Meeting will be held at the Springfield Academy of Medicine, 20 Maple Street, Springfield, at 4 P.M.
HERVEY L. SMITH, M.D., Secretary-Treasurer.
249 Union Street, Springfield, Mass.

MIDDLESEX EAST DISTRICT MEDICAL SOCIETY

May 9—See page 981.

MIDDLESEX SOUTH DISTRICT MEDICAL SOCIETY

May 3—Censors' Meeting will be held at the Boston Medical Library, 8 Fenway, Boston.

NORFOLK DISTRICT MEDICAL SOCIETY

May 8—Annual Meeting. See page 981.

NORFOLK SOUTH DISTRICT MEDICAL SOCIETY

May 3—12 noon at Norfolk County Hospital. Annual Meeting. Election of Officers.
N. R. PILLSBURY, M.D., Secretary.
Norfolk County Hospital, South Braintree, Mass.

SUFFOLK DISTRICT MEDICAL SOCIETY

May 3—Censors' Meeting will be held at 4 o'clock at the Boston Medical Library, 8 Fenway, Boston.
JAMES H. MEANS, M.D., Vice-President.
GEORGE P. REYNOLDS, M.D., Secretary,
311 Beacon Street, Boston, Mass.

WORCESTER DISTRICT MEDICAL SOCIETY

May 9—Annual Meeting. See page 981.
ERWIN C. MILLER, M.D., Secretary.
27 Elm Street, Worcester, Mass.